

July 7, 2015

Deputy Director, Division of Decommissioning, Uranium Recovery, and Waste Programs
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Mailstop T8 F5
11545 Rockville Pike
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**Project Development** 550 N. Poplar Street

**CAMECO RESOURCES** 

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Attn: Control Documents
Office of Nuclear Safety and Safeguards
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

License SUA-1548, Docket No. 40-8964 2015-16 Surety Estimate Update for Smith Ranch Highland ISR Project, Financial Assurance Estimates (TAC J00677)

Dear Sirs:

Pursuant to License Condition 9.5, Power Resources, Inc. d/b/a Cameco Resources (Cameco) is herein providing (2) copies of the 2015-16 reclamation surety estimate update for the Smith Ranch Highland ISR Project. The estimate resulted in a proposed surety amount of \$212,645,000.

If you have any questions or concerns regarding this estimate please feel free to contact Larry McGonagle at 307-333-7655.

Sincerely,

Cameco Resources

Larry McGonagle

**Division SHEQ Manger** 

LM:jmw

NMSSOI

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# SRH Uranium Project 2015-2016 Surety Estimate Update

Smith Ranch Highland SUA-1548

Date: July 7, 2015







### Net Changes identified after combining Highland and Smith Ranch/Reynolds Ranch bond documents

		cn/nnd	Combined Bond	Revised Bond SRH		
CHIP WE	Highland Bond		<b>Total - Approved</b> \$49,849,733	\$49,791,223	-\$58,510	GWS- formula/percentage incorrect
GWR -WF	\$17,427,150	\$32,422,583	\$49,849,733	\$49,791,225	-\$36,310	Average Operation years for highland was 21 versus 22 for SR,
GWR-Site	\$35,250,736	\$42,690,463	\$77,941,199	\$79,232,153	\$1,290,954	increased costs
						Removed P&A for anything prior to 2012 AR period, adjusted to
						surface cost for all remaining holes except this years drilling. Would
						be best if you could break down drilling by year versus AR
WA	\$9,411,288	\$19,554,815	\$28,966,103	\$28,519,696	-\$446,407	timeframe, ie; 2013 Drilling, etc.
						Formula correction on Well Pumps and Tubing, Well Head covers
WF Bldgs	\$4,575,869	\$4,395,707	\$8,971,576	\$9,027,274		for only P/I Wells
WF Rec	\$539,094	\$1,091,965	\$1,631,059	\$1,630,958		Rounding difference
Equip	\$666,590	\$1,025,363	\$1,691,953	\$1,692,293		Formula correction on PVC pipe transportation costs
BLDGS	\$3,191,954	\$4,193,817	\$7,385,771	\$7,327,862		Incorrect formulas with percentages
Misc Rec	\$7,180,262	\$950,075	\$8,130,337	\$8,173,757		Topsoil application depth incorrectly identified
subtotal	\$78,242,943	\$106,324,788	\$184,567,731	\$185,395,216	\$827,485	
15% Contingency	\$11,736,441.45	\$15,948,718.20	\$27,685,159.65	\$27,809,282.40	\$124,123	
Total	\$89,979,384	\$122,273,506	\$212,252,891	\$213,204,498	\$951,608	Net Change = Increase of \$951,608.
Itemized change	s in 2015-2016	surety bond	alculation		Combined Revised	1 Total = \$213,204,498
Master Cost Page	Updated utility costs	2014 actual			Net Increase	plus \$2,040,402
Master Cost Page	Updated chemical m				Net Decrease	minus \$258,900
Master Cost Page	Updated analylitical				Net Increase	plus \$278,100
Master Cost Page	Quoted costs update		st used		Net Decrease	minus \$683,400
MISC REC Page	Updated costs for PS	SR-2/CLI and new c	osts for releases & su	bsurface spills	Net Decrease	minus \$472,000
WF DATA Page	Updated planned and also updated length		Inj. wells/M-wells for & F.	or 10 ext., 7, & J-ext.	Net Increase	plus \$184,100
WA Page	Update to delineatio	n holes drilled and p	lanned		Net Increase	plus \$300,800
GWR-SITE Page			ipeline to SR-2, & phanch and updated DD	yto-rem capital costs W MIT freq.	Net Decrease	minus \$3,299,500
GWR-WF Page	Adjusted pore volun	nes for MU 4/4A, C,	D, D ext., & E		Net Decrease	minus \$293,200
WF DATA Page	Adjusted years of m	ining/restoration in a	ccordance to new wa	ter balance	Net Increase	plus \$9,996,600
Equip & BLDGS Pages				noved SRHUP#8 bldg ip at HUP not yet used	Net Decrease	minus \$99,700
WF DATA Page	Removed MU-27 V	VF development i.e.	I&P wells, HHs, Lay	down area, etc.	Net Decrease	minus \$3,457,800
Multiple pages	Removed costs for I	Reynolds Ranch Sate	llite Construction & o	operation	Net Decrease	minus \$2,125,000
WA page	Added monitor well	installation for MU-	8		Net Increase	plus \$198,500
GWR-SITE page	Add Capital costs to	install pipeline from	DDW 7 to Rey Ran	ch DDW	Net Increase	plus \$575,000
WA Page	Removed abandonm	nent costs for SRHU	P #8, Not planned		Net Decrease	minus \$164,700
GWS-WF Page	Monthly costs include		don sampling, DDW	years, not per wellfield. quarterly sampling, PWS		
	Increased monthly c	ost from \$1100 to \$	1650 w/profit & overl	head.	Net Decrease	minus \$3,278,800

New Overal Estimate for 2015-2016

\$212,645,000

**Total Restoration and Reclamation Cost Estimate Groundwater Restoration (GWR-WF and GWR-SITE Sheets)** \$131,255,454 II. Well & Drill Hole Abandonment (WA Sheet) \$27,655,904 Wellfield Buildings & Equipment Removal & Disposal (WF BLDGS Sheet) \$8,810,615 IV. Wellfield and Satellite Surface Relclamation (WF REC Sheet) \$1,205,750 V. **Equipment Removal & Disposal (EQUIP Sheet)** \$1,561,395 VI. Building Removal & Disposal (BLDGS Sheet) \$6,740,276 VII. Miscellaneous Reclamation (MISC REC Sheet) \$7,679,285 **Subtotal Restoration and Reclamation Cost Estimate** \$184,908,679 Contractor Profit & Overhead (10%)<sup>1</sup> **See Master Costs** Contingency (15%)<sup>2</sup> 15% \$27,736,302

\$212,645,000

TOTAL<sup>3</sup>

<sup>&</sup>lt;sup>1</sup>, Per WDEQ/LQD Guideline No. 12, Section 12(b)

<sup>&</sup>lt;sup>2</sup>, Per WDEQ/LQD Guideline No. 12, Section 12(a) and (c-h), Section 13 and NRC License Condition 9.5 (SUA-1548)

<sup>&</sup>lt;sup>3</sup>, Costs reflect both WDEQ & NRC requirements. No salvage value assumed.

			Mine Unit	Mine Unit		Mine Unit		
Ground Water Restoration - Wellfield I. Ground Water Sweep Costs	Mine Unit 1	Mine Unit 2	3/3Ext	4/4A	Mine Unit 15	15A	Mine Unit K	K-North
Estimated PV's Total kgals for GWS	0	1 110,785	1 152,825	. 0.6 71.530	1 137,426	1 52,669	1 84,209	1 <b>78,562</b>
Bleed to Deep Disposal Well (%) Groundwater Sweep Unit Cost (\$/kgal)	100% \$2.08	100% \$2.08	100% \$2.08	100% \$2.08	100% \$2.08	100% \$2.08	100% \$2.08	100% \$2.08
Subtotal Ground Water Sweep Costs per Wellfield Total Ground Water Sweep Costs	\$0.00 \$3,208,539	\$230,186.00	\$317,536.00	\$89,173.00	\$285,540.00	\$109,434.00	\$174,967.00	\$163,234.00
II. Reverse Osmosis Costs								
Estimated PV's Total Kgals for RO	0	4.5 498,533	4.5 687,713	2.8 333,805	4.5 618,417	4.5 237,011	4.5 378,941	4.5 353,529
Wellfield Pumping Cost Reverse Osmosis Unit Cost (\$/kgal)	\$0.20 \$0.62	\$0.20 \$0.62	\$0.20 \$0.62	\$0.20 \$0.62	\$0.20 \$0.62	\$0.20 \$0.62	\$0.20 \$0.62	\$0.20 \$0.62
Bleed to Deep Disposal Well (%) Brine Volume for Disposal	20% 0	20% 99,707	20% 137,543	20% 66,761	20% 123,683	20% 47,402	20% 75,788	20% 70,706
DDW Disposal Cost(\$/kgal) Permeate Volume for Re-Use	\$1.15 0	\$1.15 398,826	\$1.15 550,170	\$1.15 267,044	\$1.15 494,734	\$1.15 189,608	\$1.15 303,152	\$1.15 282,823
Satellite Pumping Cost Subtotal Reverse Osmosis & Disposal Costs per Wellfield	\$0.73 \$0.00	\$0.73 \$812,580.80	\$0.73 \$1,120,933.89	\$0.73 \$544,083.63	\$0.73 \$1,007,986.00	\$0.73 \$386,314.19	\$0.73 \$617,652.36	\$0.73 \$576,233.00
Total Reverse Osmosis Costs  III. Reverse Osmosis with Chemical Reductant Costs	\$13,255,053							
Estimated PV's Total kgals for RO	0.0	3.5 387,748	3.5 534,888	2.8 333,805	3.5 480,991	3.5 184,342	3.5 294,732	3.5 274,967
Wellfield Pumping Cost Reverse Osmosis with Chemical Reductant Unit Cost (\$/kgal)	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72
Bleed to Deep Disposal Well (%) Brine Volume for Disposal (kgal)	20%	20%	20%	20%	20%	20%	20%	20% 54,993
DDW Disposal Cost(\$/kgal) Permeate Volume for Re-Use	\$1.15 \$0	77,550 \$1.15 \$310,198	106,978 \$1.15 \$427,910	66,761 \$1.15 \$267,044	96,198 \$1.15 \$384,793	36,868 \$1.15 \$147,473	58,946 \$1.15 \$235,785	\$1.15 \$219,974
Satellite Pumping Cost (\$/kgal)	\$0.73	\$0.73	\$0.73	\$0.73	\$0.73	\$0.73	\$0.73	\$0.73
Subtotal RO with Chemical Reductant per Wellfield Total Reverse Osmosis Costs	\$0.00 \$11,551,107	\$672,216.70	\$927,305.30	\$578,699.18	\$833,867.88	\$319,582.81	\$510,959.93	\$476,695.30
IV. Mechanical Integrity Testing (MIT) Costs Pre-Restoration, Restoration and Stability Period (yrs)	1	8	17	6	15	15	14	16
Number of Injection Wells Number of MITs required per Well	160 0.2	233 1.6	280 3.4	371 1.2	835 3.0	0	280 2.8	175 3.2
MIT Cost per Injection Well Subtotal MIT Mine Unit	\$133,34 \$4,266.90	\$133.34 \$49,709.36	\$133.34 \$126,940.21	\$133.34 \$59,363.22	\$133.34 \$334,018.10	\$133.34 \$0.00	\$133.34 \$104,539.00	\$133.34 \$74,670.71
Total MIT Costs	\$2,204,439	547,107.50	\$120,540.21	\$37,303,22	۷,010,10	30.00	3104,557.00	\$74,070.71
V. Wellfield Refurbishment Costs Well Replacement (#)	0	. 10	50	10	50	0	0	0
Replacement (\$/well) Bellhole Refurbishment (#)	\$15,600 0	\$15,600 7	\$15,600 11	\$15,600 14	\$15,600 0	\$15,600 0	\$15,600 0	\$15,600 0
Refurbishment (\$/bellhole) Header House Refurbishment (#)	\$5,500 0	\$5,500 5	\$5,500 5	\$5,500 5	\$5,500 12	\$5,500 0	\$5,500 0	\$5,500 0
Refurbishment (\$/header house) Subtotal Refurbishment Cost per Wellfield	\$10,000 \$0	\$10,000 \$244,500	\$10,000 \$890,500	\$10,000 \$283,000	\$10,000 \$900,000	\$10,000 \$0	\$10,000 \$0	000,012 02
Total Wellfield Refurbishment Cost VI. Monitoring and Sampling Costs	\$6,167,800							
A. Pre-Restoration Monitoring  1. Excursion Monitoring (M, MO and MU wells, twice per month)								
# of Wells Total # samples	49 0	50 0	40 5760	90 0	83 9960	42 9072	51 8568	53 11448
UCL Parameters (\$/sample) Subtotal Pre-Restoration Monitoring Costs per Mine Unit	\$30.00 \$0.00	\$30.00 \$0.00	\$30.00 \$172,800.00	\$30.00 \$0.00	\$30.00 \$298,800.00	\$30.00 \$272,160.00	\$30.00 \$257,040.00	\$30.00 \$343,440.00
Total Pre-Restoration Monitoring Costs  B. Restoration Monitoring	\$4,198,320	\$0.00	3172,000.00	30.00	3270,000.00	\$272,100.00	\$257,040.00	33-13,-10.00
Sampling Prior to Start-up (MP Wells)     # of Wells	19	13	24	12	22	10	13	11
Guideline 8 (\$/sample)  2. Restoration Progress Monitoring (MP Wells, every 2 months)	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00
# of Wells Total # samples	19 0	13 <b>546</b>	24 1440	12 360	22 1188	10 300	13 468	11 396
Restoration Progress Parameters (\$/sample) 3. Excursion Monitoring (M, MO and MU wells, every 2 months)	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00
# of Wells Total # samples	49 0	50 2100	40 2400	90 2700	83 4482	42 1260	51 1836	53 1908
UCL Parameters (\$/sample) Subtotal Restoration Monitoring Costs per Mine Unit	\$30.00 \$7,068.00	\$30.00 \$95,136.00	\$30.00 \$152,928.00	\$30.00 \$103,464.00	\$30.00 \$202,044.00	\$30.00 \$56,520.00	\$30.00 \$83,316.00	\$30,00 \$81,132.00
Total Restoration Monitoring Costs C. Stability Monitoring	\$1,899,072.00	0,0,100.00	0102,720.00	0103,101100	Q202,0 + 1100	450,520.00	405,510.00	<b>401,122.00</b>
Beginning of stability (MP wells) # of Wells # of Wells	19	13	24	12	22	10	13	11
Guideline 8 (\$/sample) 2. Quarterly sampling (MP wells)	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00
# of Wells Total # samples	19 76	13 52	24 96	12 48	22 88	10 40	13 52	11 44
Guideline 8 (\$/sample) 3. Monitor Well Sampling (M wells, every 2 months)	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00
# of Wells Total # samples	25 150	24 1 <b>44</b>	24 144	57 342	39 234	18 108	28 168	28 168
UCL Parameters (\$/sample) Subtotal Stability Monitoring Costs per Mine Unit	\$30.00 \$39,840.00	\$30.00 \$28,500.00	\$30.00 \$48,960.00	\$30.00 \$32,580.00	\$30.00 \$47,940.00	\$30.00 \$21,840.00	\$30.00 \$29,220.00	\$30.00 \$25,500.00
Total Stability Monitoring Costs D. Other Laboratory Costs	\$709,860.00	,	,	,	,.		,	••••
Radon, bio-assay, & other sampling costs/month at mine site Subtotal Monitoring and Sampling Costs per Mine Unit	\$475,200.00 \$46,908.00	\$123,636.00	\$374,688.00	\$136,044.00	\$548,784.00	\$350,520.00	\$369,576.00	\$450,072.00
Total Monitoring and Sampling Costs	\$7,282,452	. ,	,		,, , , , , , , ,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
VII. Header House Heating Costs  Number of Header Houses per Unit(s)  Per Restriction and Restriction Period (cm)	6	5 7	10	11	18	5	9	7
Pre-Restoration and Restoration Period (yrs) Electrical Heating Costs (\$/yr) Subtotal Header House Heating Cost per Wellfield	0 \$1,063 \$0	\$1,063 \$37,195	16 \$1,063 \$170,035	\$1,063 \$1,063	14 \$1,063 \$267.805	14 \$1,063 \$74,390	\$1,063 \$1,07 338	15 \$1,063 \$111,586
Total Header House Heating Costs	\$2,627,044			\$58,450	\$267,805	\$74,390	\$124,338	
TOTAL RESTORATION COST PER WELLFIELD TOTAL WELLFIELD RESTORATION COSTS	\$51,175 <b>\$46,296,433</b>	\$2,170,024	\$3,927,939	\$1,748,813	\$4,178,001	\$1,240,241	\$1,902,033	\$1,852,491

Ground Water Restoration - Welfüeld	Mine Unit 9	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	A-Wellfield	B-Wellfield
I. Ground Water Sweep Costs Estimated PV's Total kgals for GWS Bleed to Deep Disposal Well (%) Groundwater Sweep Unit Cost (\$/kgal)	1 136,376 100% \$2.08	1 190,435 100% \$2.08	100% \$2.08	0 0 100% \$2.08	0 0 100% \$2.08	1 104,736 100% \$2.08	0 0 100% \$1.34	0 0 100% \$1.34
Subtotal Ground Water Sweep Costs per Wellfield  Total Ground Water Sweep Costs	\$283,358.00	\$395,681.00	\$206,734.00	\$0.00	\$0.00	\$217,618.00	\$0	\$0
II. Reverse Osmosis Costs  Estimated PV's  Total Kgals for RO  Wellfield Pumping Cost  Reverse Osmosis Unit Cost (\$/kgal)  Bleed to Deep Disposal Well (%)  Brine Volume for Disposal  DDW Disposal Cost(\$/kgal)  Permeate Volume for Re-Use  Satellite Pumping Cost  Subtotal Reverse Osmosis & Disposal Costs per Wellfield  Total Reverse Osmosis Costs	4.5 613,692 \$0.20 \$0.62 20% 122,738 \$1.15 490,954 \$0.73 \$1,000,284.51	4.5 856,958 \$0.20 \$0.62 20% 171,392 \$1.15 685,566 \$0.73 \$1,396,794.01	4.5 447,741 \$0.20 \$0.62 20% 89,548 \$1.15 358,193 \$0.73 \$729,793.42	0 \$0.20 \$0.62 20% 0 \$1.15 0 \$0.73	0 \$0.20 \$0.62 20% 0 \$1.15 0 \$0.73	4.5 471,312 \$0.20 \$0.62 20% 94,262 \$1.15 377,050 \$0.73 \$768,212.87	0 \$0.20 \$0.62 20% 0 \$1.15 0 \$0.73	0 0 \$0.20 \$0.62 20% 0 \$1.15 0 \$0.73
III. Reverse Osmosis with Chemical Reductant Costs Estimated PV's Total kgals for RO Wellfield Pumping Cost Reverse Osmosis with Chemical Reductant Unit Cost (\$/kgal) Bleed to Deep Disposal Well (%) Brine Volume for Disposal (kgal) DDW Disposal Cost(\$/kgal) Permeate Volume for Re-Use	3.5 477,316 \$0.20 \$0.72 20% 95,463 \$1.15 \$381,853	3.5 666,523 \$0.20 \$0.72 20% 133,305 \$1.15	3.5 348,243 \$0.20 \$0.72 20% 69,649 \$1.15 \$278,594	0.0 0 \$0.20 \$0.72 20% 0 \$1.15	0.0 0 \$0.20 \$0.72 20% 0 \$1.15	3.5 366,576 \$0.20 \$0.72 20% 73.315 \$1.15 \$293,261	0 0 \$0.20 \$0.72 20% 0 \$1.15	0 0 \$0.20 \$0.72 20% 0 \$1.15
Satellite Pumping Cost (\$/kgal) Subtotal RO with Chemical Reductant per Wellfield Total Reverse Osmosis Costs	\$0.73 \$827,496.73	\$0.73 \$1,155,513.72	\$0.73 \$603,729.90	\$0.73 \$0.00	\$0.73 \$0.00	\$0.73 \$635,512.83	\$0.73 \$0	\$0.73 \$0
IV. Mechanical Integrity Testing (MIT) Costs Pre-Restoration, Restoration and Stability Period (yrs) Number of Injection Wells Number of MITs required per Well MIT Cost per Injection Well Subtotal MIT Mine Unit Total MIT Costs	22 398 4.4 \$133.34 \$233,505.99	25 380 5.0 \$133.34 \$253,347.06		0 0.0 \$133.34 \$0.00	0 0.0 \$133.34 \$0.00	19 247 3.8 \$133.34 \$125,153.45	0 1 0.0 \$133.34 \$0	0 194 0.0 \$133.34 \$0
V. Wellfield Refurbishment Costs Well Replacement (#) Replacement (S/well) Bellhole Refurbishment (#) Refurbishment (\$/bellhole) Header House Refurbishment (#) Refurbishment (\$/header house) Subtotal Refurbishment Cost per Wellfield Total Wellfield Refurbishment Cost	\$15,600 0 \$5,500 0 \$10,000	0 \$15,600 0 \$5,500 0 \$10,000	0 \$15,600 0 \$5,500 0 \$10,000	0 \$15,600 0 \$5,500 0 \$10,000	0 \$15,600 0 \$5,500 0 \$10,000	0 \$15,600 0 \$5,500 0 \$10,000	\$15,600 0 \$5,500 0 \$10,000	\$15,600 0 \$5,500 \$10,000 \$0
VI. Monitoring and Sampling Costs A. Pre-Restoration Monitoring i. Excursion Monitoring (M, MO and MU wells, twice per month) # of Wells Total # samples UCL Parameters (\$/sample) Subtotal Pre-Restoration Monitoring Costs per Mine Unit Total Pre-Restoration Monitoring Costs B. Restoration Monitoring	69 21528 \$30.00 \$645,840.00	49 16464 \$30.00 \$493,920.00	48 20736 \$30.00 \$622,080.00	85 0 \$30.00 \$0.00	0 0 \$30.00 \$0.00	62 16368 \$30.00 \$491,040.00	7 0 \$30.00 \$0.00	64 9 \$30.00 \$0.00
Sampling Prior to Start-up (MP Wells) # of Wells Guideline 8 (\$/sample)     Restoration Progress Monitoring (MP Wells, every 2 months)	14 \$372.00	20 \$372.00	9 \$372.00	0 \$372.00	0 \$372.00	18 \$372.00	0 \$372.00	0 \$372.00
# of Wells Total # samples Restoration Progress Parameters (\$/sample)	14 672 \$50.00	20 1200 \$50.00	9 270 \$50.00	0 0 \$50.00	0 0 \$50.00	18 756 \$50.00	0 0 \$50.00	0 0 \$50.00
3. Excursion Monitoring (M, MO and MU wells, every 2 months) # of Wells Total # samples UCL Parameters (S/sample) Subtotal Restoration Monitoring Costs per Mine Unit Total Restoration Monitoring Costs C. Stability Monitoring	69 3312 \$30.00 \$138,168.00	49 2940 \$30.00 \$155,640.00	1440 \$30.00	\$30.00 \$0.00	0 0 \$30.00 \$0.00	62 2604 \$30.00 \$122,616.00	7 0 \$30.00 \$0.00	64 0 \$30.00 \$0.00
1. Beginning of stability (MP wells) # of Wells Guideline 8 (\$/sample)	14 \$372.00	20 \$372.00		0 \$372.00	0 \$372.00	18 \$372.00	0 \$372.00	0 \$372.00
2. Quarterly sampling (MP wells) # of Wells Total # samples	14 56	20 80	36	0	0 0	18 72	0 0	0 0
Guideline 8 (\$/sample) 3. Monitor Well Sampling (M wells, every 2 months) # of Wells Total # samples UCL Parameters (\$/sample)	\$372.00 43 258 \$30.00	\$372.00 49 294 \$30.00	20 120 \$30.00	\$372.00 0 0 \$30.00	\$372.00 0 0 \$30.00	\$372.00 20 120 \$30.00	\$372.00 0 0 \$30.00	\$372.00 0 0 \$30.00
Subtotal Stability Monitoring Costs per Mine Unit Total Stability Monitoring Costs  D. Other Laboratory Costs  Radon, bio-assay, & other sampling costs/month at mine site	\$33,780.00	\$46,020.00	·	\$0.00	\$0.00	\$37,080.00	\$0.00	\$0.00
Subtotal Monitoring and Sampling Costs per Mine Unit Total Monitoring and Sampling Costs VII. Header House Heating Costs	\$817,788.00	\$695,580.00		\$0.00	\$0.00	\$650,736.00	\$0	\$0
Number of Header Houses per Unit(s) Pre-Restoration and Restoration Period (yrs) Electrical Heating Costs (\$/yr) Subtotal Header House Heating Cost per Weilfield Total Header House Heating Costs	13 21 \$1,063 \$290,123	9 24 \$1,063 \$229,548	23 \$1,063	0 0 \$1,063 \$0	0 0 \$1,063 \$0	7 18 \$1,063 \$133,903	5 0 \$1,063 \$0	18 0 \$1,063 \$0
TOTAL RESTORATION COST PER WELLFIELD TOTAL WELLFIELD RESTORATION COSTS	\$3,452,556	\$4,126,463	\$2,530,188	\$0	\$0	\$2,531,136	\$0	\$0

-			С					
Ground Water Restoration - Wellfield  I. Ground Water Sweep Costs	C-Wellfield	C-22 Pattern	abandoned	D-Wellfield	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield
Estimated PV's	0	0	0	0	0	0.5	1	1
Total kgals for GWS Bleed to Deep Disposal Well (%)	0 100%	0 100%	0 100%	0 100%	0 100%	45,540 100%	232,890 100%	90,864 100%
Groundwater Sweep Unit Cost (\$/kgal) Subtotal Ground Water Sweep Costs per Wellfield	\$1.34 \$0	\$1.34 \$0	\$1.34 \$0	\$1.34 \$0	\$1.34 \$0	\$1.34 \$30,499	\$1.34 \$311,946	\$1.34 \$121,708
Total Ground Water Sweep Costs	30	Ψ	30	Φ0	40	930, <del>1</del> 77	9511,540	\$121,700
II. Reverse Osmosis Costs		_	_					
Estimated PV's Total Kgals for RO	1 0	0	0	1 0	1	273,240	4.5 1,048,005	4.5 408,888
Wellfield Pumping Cost Reverse Osmosis Unit Cost (\$/kgal)	\$0.20 \$0.62	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20
Bleed to Deep Disposal Well (%)	20%	\$0.62 20%	\$0.62 20%	\$0.62 20%	\$0.62 20%	\$0.62 20%	\$0.62 20%	\$0.62 20%
Brine Volume for Disposal DDW Disposal Cost(\$/kgal)	0 \$1.15	0 \$1.15	0 \$1.15	0 \$1.15	0 \$1.15	54,648 \$1.15	209,601 \$1,15	81,778 \$1.15
Permeate Volume for Re-Use Satellite Pumping Cost	0	0	0	0	0	218,592	838,404	327,110
Subtotal Reverse Osmosis & Disposal Costs per Wellfield	\$0.73 \$0	\$0.73 \$0	\$0.73 \$0	\$0.73 \$0	\$0.73 \$0	\$0.73 \$444,393	\$0.73 \$1,704,459	\$0.73 \$665,009
Total Reverse Osmosis Costs								
III. Reverse Osmosis with Chemical Reductant Costs Estimated PV's	l	1	1	ı	1	3	3.5	3.5
Total kgals for RO Wellfield Pumping Cost	127,233	19,691	0	32,309	19,233	273,240	815,115	318,024
Reverse Osmosis with Chemical Reductant Unit Cost (\$/kgal)	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72
Bleed to Deep Disposal Well (%) Brine Volume for Disposal (kgal)	20% 25,447	20% 3,938	20% 0	20% 6,462	20% 3,847	20% 54,648	20% 163,023	20% 63,605
DDW Disposal Cost(\$/kgal)	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15
Permeate Volume for Re-Use Satellite Pumping Cost (\$/kgal)	101,786 \$0.73	15,753 \$0.73	0 \$0.73	25,847 \$0.73	15,386 \$0.73	218,592 \$0.73	652,092 \$0.73	254,419 \$0.73
Subtotal RO with Chemical Reductant per Wellfield Total Reverse Osmosis Costs	\$220,577	\$34,137	\$0	\$56,012	\$33,343	\$473,701	\$1,413,120	\$551,341
IV. Mechanical Integrity Testing (MIT) Costs								
Pre-Restoration, Restoration and Stability Period (yrs)	2	2	2	2	2	5	21	8
Number of Injection Wells Number of MITs required per Well	258 0.4	0 0.4	0 0.4	143 0.4	0 0.4	229 1.0	704 4.2	285 1.6
MIT Cost per Injection Well	\$133.34	\$133.34	\$133.34	\$133.34	\$133.34	\$133.34	\$133.34	\$133.34
Subtotal MIT Mine Unit Total MIT Costs	\$13,761	\$0	\$0	\$7,627	\$0	\$30,535	\$394,261	\$60,803
V. Wellfield Refurbishment Costs								
Well Replacement (#) Replacement (\$\text{S/well})	5 \$15,600	0 \$15,600	0 \$15,600	0 \$15,600	0 \$15,600	10 \$15,600	180 \$15,600	\$ \$15,600
Bellhole Refurbishment (#)	0	0	0	0	0	0	0	0
Refurbishment (\$/bellhole) Header House Refurbishment (#)	\$5,500 0	\$5,500 0	\$5,500 0	\$5,500 0	\$5,500 0	\$5,500 0	\$5,500 26	\$5,500 0
Refurbishment (\$\text{Sheader house}\) Subtotal Refurbishment Cost per Wellfield	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Total Wellfield Refurbishment Cost	\$78,000	\$0	\$0	\$0	\$0	\$156,000	\$3,068,000	\$78,000
VI. Monitoring and Sampling Costs								
A. Pre-Restoration Monitoring     I. Excursion Monitoring (M, MO and MU wells, twice per month)								
# of Wells Total # samples	85 0	0	0	50 0	0	59 0	113 13560	74 0
UCL Parameters (\$/sample)	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
Subtotal Pre-Restoration Monitoring Costs per Mine Unit Total Pre-Restoration Monitoring Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$406,800.00	\$0.00
B. Restoration Monitoring 1. Sampling Prior to Start-up (MP Wells)								
# of Wells	0	0	0	0	0	0	21	12
Guideline 8 (\$/sample)  2. Restoration Progress Monitoring (MP Wells, every 2 months)	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00
# of Wells Total # samples	32 576	0	11 0	9 162	5 60	29 870	21 1134	12
Restoration Progress Parameters (\$/sample)	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	360 \$50.00
<ol> <li>Excursion Monitoring (M, MO and MU wells, every 2 months)</li> <li># of Wells</li> </ol>	85	0	0	50	0	59	113	74
Total # samples UCL Parameters (\$/sample)	1530	0	0	900	0	1770	6102	2220
Subtotal Restoration Monitoring Costs per Mine Unit	\$30.00 \$74,700.00	\$30.00 \$0.00	\$30.00 \$0.00	\$30.00 \$35,100.00	\$30.00 \$3,000.00	\$30.00 \$96,600.00	\$30.00 \$247,572.00	\$30.00 \$89,064.00
Total Restoration Monitoring Costs C. Stability Monitoring								
Beginning of stability (MP wells)	20				_			
# of Wells Guideline 8 (\$/sample)	32 \$372.00	9 \$372.00	11 \$372.00	9 \$372.00	5 \$372.00	\$372.00	21 \$372.00	12 \$372.00
2. Quarterly sampling (MP wells) # of Wells	32	0	11	9	5	29	21	12
Total # samples	128	0	44	36	20	116	84	48
Guideline 8 (\$/sample) 3. Monitor Well Sampling (M wells, every 2 months)	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00	\$372.00
# of Wells Total # samples	37 222	0	0	17 102	10 60	26 156	48 288	45 270
UCL Parameters (\$/sample)	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
Subtotal Stability Monitoring Costs per Mine Unit Total Stability Monitoring Costs	\$66,180.00	\$0.00	\$20,460.00	\$19,800.00	\$11,100.00	\$58,620.00	\$47,700.00	\$30,420.00
D. Other Laboratory Costs Radon, bio-assay, & other sampling costs/month at mine site								
Subtotal Monitoring and Sampling Costs per Mine Unit	\$140,880	\$0	\$20,460	\$54,900	\$14,100	\$155,220	\$702,072	\$119,484
Total Monitoring and Sampling Costs								
VII. Header House Heating Costs Number of Header Houses per Unit(s)	20	0	0	4	3	15	43	10
Pre-Restoration and Restoration Period (yrs) Electrical Heating Costs (\$/yr)	3 \$1,063	0 \$1,063	\$1,063	3 \$1,063	\$1,063	\$1,063	14 \$1,063	5 \$1,063
Subtotal Header House Heating Cost per Wellfield	\$63,763	\$0	\$0	\$12,753	\$6,376	\$79,704	\$639,757	\$53,136
Total Header House Heating Costs TOTAL RESTORATION COST PER WELLFIELD	\$516,981	\$34,137	\$20 440	£121 202	642 010	\$1.270.052	88 222 616	\$1 £40 401
TOTAL WELLFIELD RESTORATION COSTS	9210,781	<b>\$34,13</b> 7	\$20,460	\$131,292	\$53,819	\$1,370,052	\$8,233,615	\$1,649,481

Ground Water Restoration - Wellfield	I-Wellfield	J-Welffield	J-Extension
I. Ground Water Sweep Costs Estimated PV's	i	1	1
Total kgals for GWS Bleed to Deep Disposal Well (%)	84,780 100%	66,812 100%	50,673 100%
Groundwater Sweep Unit Cost (\$/kgal) Subtotal Ground Water Sweep Costs per Wellfield	\$1.34 \$113,559	\$1.34 \$89,492	\$1.34 \$67,874
Total Ground Water Sweep Costs	\$113,337	307,472	407,674
II. Reverse Osmosis Costs	4.6	4.6	4.5
Estimated PV's Total Kgals for RO	4.5 381,510	4.5 300,654	4.5 228,029
Wellfield Pumping Cost Reverse Osmosis Unit Cost (\$/kgal)	\$0.20 \$0.62	\$0.20 \$0.62	\$0.20 \$0.62
Bleed to Deep Disposal Well (%) Brine Volume for Disposal	20% 76,302	20% 60,131	20% 45,606
DDW Disposal Cost(\$/kgal)	\$1.15	\$1.15	\$1.15
Permeate Volume for Re-Use Satellite Pumping Cost	305,208 \$0.73	240,523 \$0.73	182,423 \$0.73
Subtotal Reverse Osmosis & Disposal Costs per Wellfield Total Reverse Osmosis Costs	\$620,482	\$488,979	\$370,862
III. Reverse Osmosis with Chemical Reductant Costs			
Estimated PV's Total kgals for RO	3.5 296,730	3.5 233.842	3.5 177,356
Wellfield Pumping Cost	\$0.20 \$0.72	\$0.20 \$0.72	\$0.20 \$0.72
Reverse Osmosis with Chemical Reductant Unit Cost (\$/kgal) Bleed to Deep Disposal Well (%)	20%	20%	20%
Brine Volume for Disposal (kgal) DDW Disposal Cost(\$/kgal)	59,346 \$1.15	46,768 \$1.15	35,471 \$1.15
Permeate Volume for Re-Use Satellite Pumping Cost (\$/kgal)	237,384	187,074	141,884
Subtotal RO with Chemical Reductant per Wellfield	\$0.73 \$514,425	\$0.73 \$405,399	\$0.73 \$307,472
Total Reverse Osmosis Costs			
IV. Mechanical Integrity Testing (MIT) Costs Pre-Restoration, Restoration and Stability Period (yrs)	7	17	14
Number of Injection Wells Number of MITs required per Well	234	233	112
MIT Cost per Injection Well	1,4 \$133,34	3.4 \$133.34	2.8 \$133.34
Subtotal MIT Mine Unit Total MIT Costs	\$43,682	\$105,632	\$41,816
V. Wellfield Refurbishment Costs			
Well Replacement (#) Replacement (\$/well)	10 \$15,600	18 \$15,600	\$15,600
Bellhole Refurbishment (#)	6	0	0
Refurbishment (\$/bellhole) Header House Refurbishment (#)	\$5,500 0	\$5,500 0	\$5,500 0
Refurbishment (\$/header house) Subtotal Refurbishment Cost per Wellfield	\$10,000 \$189,000	\$10,000 \$280,800	\$10,000 \$0
Total Wellfield Refurbishment Cost	<b>4.03,000</b>	<b>\$2</b> 00,000	•
VI. Monitoring and Sampling Costs A. Pre-Restoration Monitoring			
Excursion Monitoring (M, MO and MU wells, twice per month) # of Wells	34	45	42
Total # samples	0	6480	0
UCL Parameters (\$/sample) Subtotal Pre-Restoration Monitoring Costs per Mine Unit	\$30.00 \$0.00	\$30.00 \$194,400.00	\$30.00 \$0.00
Total Pre-Restoration Monitoring Costs B. Restoration Monitoring			
I. Sampling Prior to Start-up (MP Wells)	,		
# of Wells Guideline 8 (\$/sample)	\$372.00	\$372.00	\$372.00
<ol><li>Restoration Progress Monitoring (MP Wells, every 2 months) # of Wells</li></ol>	6	12	5
Total # samples	180	288	0
Restoration Progress Parameters (\$/sample) 3. Excursion Monitoring (M, MO and MU wells, every 2 months)	\$50.00	\$50.00	\$50.00
# of Wells Total # samples	34 1020	45 1080	42 0
UCL Parameters (\$/sample)	\$30.00	\$30.00 \$51,264.00	\$30.00
Subtotal Restoration Monitoring Costs per Mine Unit Total Restoration Monitoring Costs	\$41,832.00	\$31,204.00	\$1,860.00
C. Stability Monitoring 1. Beginning of stability (MP wells)			
# of Wells Guideline 8 (\$/sample)	\$372.00	12 \$372.00	5 \$372.00
2. Quarterly sampling (MP wells)			5
# of Wells Total # samples	6 24	12 48	0
Guideline 8 (\$/sample)  3. Monitor Well Sampling (M wells, every 2 months)	\$372.00	\$372.00	\$372.00
# of Wetis Total # samples	20 120	28 168	20
UCL Parameters (\$/sample)	\$30.00	\$30.00	\$30.00
Subtotal Stability Monitoring Costs per Mine Unit Total Stability Monitoring Costs	\$14,760.00	\$27,360.00	\$1,860.00
D. Other Laboratory Costs  Radon, bio-assay, & other sampling costs/month at mine site			
Subtotal Monitoring and Sampling Costs per Mine Unit Total Monitoring and Sampling Costs	\$56,592	\$273,024	\$3,720
VII. Header House Heating Costs			
Number of Header Houses per Unit(s)	6 5	9 10	5 0
Pre-Restoration and Restoration Period (yts) Electrical Heating Costs (\$/yr)	\$1,063	\$1,063	\$1,063
Subtotal Header House Heating Cost per Wellfield Total Header House Heating Costs	\$31,882	\$95,645	\$0
TOTAL RESTORATION COST PER WELLFIELD	\$1,569,622	\$1,738,971	\$791,744
TOTAL WELLFIELD RESTORATION COSTS			

### Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update Ground Water Restoration - Site Wide

I.	<b>Building Utility Costs</b>	СРР	Main Office
	Electricity Unit Cost (\$/yr)	\$30,759	\$25,880
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$76,058	\$0
	Number of Years	24	24
	Subtotal Utility Cost per Building	\$2,563,609	\$621,118
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27		
	Total Building Utility Costs	\$9,034,912	
II.	Deep Disposal Well Utility Costs	SR-1	SR-2
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	24
	Subtotal Utility Cost per Building	\$111,441	\$111,441
	Total Deep Disposal Well Utility Costs	\$919,392	

### Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update Ground Water Restoration - Site Wide

I.	<b>Building Utility Costs</b>	Maint Shop	Pumphouse
	Electricity Unit Cost (\$/yr)	\$5,820	\$10,202
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	24
	Subtotal Utility Cost per Building	\$139,680	\$244,859
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27		

**Total Building Utility Costs** 

п.	Deep Disposal Well Utility Costs	REY-1	REY-2
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	0
	Subtotal Utility Cost per Building	\$111,441	\$0

### Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update Ground Water Restoration - Site Wide

I.	<b>Building Utility Costs</b>	Sat SR-1	Sat SR-2
	Electricity Unit Cost (\$/yr)	\$41,764	\$41,764
	Propane (\$/yr)	\$0	\$60,983
	Natural Gas (\$/yr)	\$9,507	\$0
	Number of Years	16	24
	Subtotal Utility Cost per Building	\$820,340	\$2,465,928
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27		

**Total Building Utility Costs** 

II.	Deep Disposal Well Utility Costs	REY-3	SRHUP #6
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	0	24
	Subtotal Utility Cost per Building	\$0	\$111,441

## Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update Ground Water Restoration - Site Wide

I.	<b>Building Utility Costs</b>	Sat Reynolds	Satellite No.2
	Electricity Unit Cost (\$/yr)	\$41,764	\$28,830
	Propane (\$/yr)	\$60,983	\$0
	Natural Gas (\$/yr)	\$0	\$9,494
	Number of Years	0	7
	Subtotal Utility Cost per Building	\$0	\$268,264
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27		

**Total Building Utility Costs** 

II.	Deep Disposal Well Utility Costs	SRHUP #7	SRHUP #8
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	0
	Subtotal Utility Cost per Building	\$111,441	\$0

### Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update Ground Water Restoration - Site Wide

I.	<b>Building Utility Costs</b>	Selenium Plant	Satellite No.3
	Electricity Unit Cost (\$/yr)	\$41,362	\$28,830
	Propane (\$/yr)	\$0	\$42,293
	Natural Gas (\$/yr)	\$9,494	\$0
	Number of Years	18	14
	Subtotal Utility Cost per Building	\$915,394	\$995,721
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		

### **Total Building Utility Costs**

П.	Deep Disposal Well Utility Costs	SRHUP #10	Morton 1-20
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	18
	Subtotal Utility Cost per Building	\$111,441	\$83,581

<sup>\*</sup>Yrs for Satellite Reynolds assumes end of restoration for MU-27

## Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update

#### **Ground Water Restoration - Site Wide**

### I. Building Utility Costs

Electricity Unit Cost (\$/yr)

Propane (\$/yr)

Natural Gas (\$/yr)

Number of Years

Subtotal Utility Cost per Building

\*Yrs for Satellite SR-1 assumes end of restoration for MU-7

\*Yrs for Satellite Reynolds assumes end of restoration for MU-27

#### **Total Building Utility Costs**

II.	Deep Disposal Well Utility Costs	Vollman 33- 27	SRHUP #9
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	18	18
	Subtotal Utility Cost per Building	\$83,581	\$83,581

### **Smith Ranch Highland Uranium Project** 2015-2016 Surety Estimate Update Ground Water Restoration - Site Wide

+	<b>Building Utility Costs</b>	CPP	Main Office
	Electricity Unit Cost (\$/yr)	\$30,759	\$25,880
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$76,058	\$0
	Number of Years	24	24
	Subtotal Utility Cost per Building	\$2,563,609	\$621,118
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27		
	Total Building Utility Costs	\$9,034,912	
п.	Deep Disposal Well Utility Costs	SR-1	SR-2
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	24
	Subtotal Utility Cost per Building	\$111,441	\$111,441
	Total Deep Disposal Well Utility Costs	\$919,392	

### Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update Ground Water Restoration - Site Wide

+	<b>Building Utility Costs</b>	Maint Shop	Pumphouse
	Electricity Unit Cost (\$/yr)	\$5,820	\$10,202
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	24
	Subtotal Utility Cost per Building	\$139,680	\$244,859
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27		
	Total Building Utility Costs		

II.	Deep Disposal Well Utility Costs	REY-1	REY-2
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	0
	Subtotal Utility Cost per Building	\$111,441	\$0

### Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update Ground Water Restoration - Site Wide

+	<b>Building Utility Costs</b>	Sat SR-1	Sat SR-2
	Electricity Unit Cost (\$/yr)	\$41,764	\$41,764
	Propane (\$/yr)	\$0	\$60,983
	Natural Gas (\$/yr)	\$9,507	\$0
	Number of Years	16	24
	Subtotal Utility Cost per Building	\$820,340	\$2,465,928
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27		

**Total Building Utility Costs** 

п.	Deep Disposal Well Utility Costs	REY-3	SRHUP #6
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	0	24
	Subtotal Utility Cost per Building	\$0	\$111,441

## Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update

### **Ground Water Restoration - Site Wide**

+	<b>Building Utility Costs</b>	Sat Reynolds S	atellite No.2
	Electricity Unit Cost (\$/yr)	\$41,764	\$28,830
	Propane (\$/yr)	\$60,983	\$0
	Natural Gas (\$/yr)	\$0	\$9,494
	Number of Years	0	7
	Subtotal Utility Cost per Building	\$0	\$268,264
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27		
	Total Building Utility Costs		

II.	Deep Disposal Well Utility Costs	SRHUP #7	SRHUP #8
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	0
	Subtotal Utility Cost per Building	\$111,441	\$0

### Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update Ground Water Restoration - Site Wide

+	<b>Building Utility Costs</b>	Selenium Plant	Satellite No.3
	Electricity Unit Cost (\$/yr)	\$41,362	\$28,830
	Propane (\$/yr)	\$0	\$42,293
	Natural Gas (\$/yr)	\$9,494	\$0
	Number of Years	18	14
	Subtotal Utility Cost per Building	\$915,394	\$995,721
	*Yrs for Satellite SR-1 assumes end of restoration for MU-7		
	*Yrs for Satellite Reynolds assumes end of restoration for MU-27		

**Total Building Utility Costs** 

П.	Deep Disposal Well Utility Costs	SRHUP #10	Morton 1-20
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	24	18
	Subtotal Utility Cost per Building	\$111,441	\$83,581

### **Ground Water Restoration - Site Wide**

#### + Building Utility Costs

Electricity Unit Cost (\$/yr)

Propane (\$/yr)

Natural Gas (\$/yr)

Number of Years

Subtotal Utility Cost per Building

\*Yrs for Satellite SR-1 assumes end of restoration for MU-7

\*Yrs for Satellite Reynolds assumes end of restoration for MU-27

#### **Total Building Utility Costs**

II.	Deep Disposal Well Utility Costs	Vollman 33- 27	SRHUP #9
	Electricity Unit Cost (\$/yr)	\$4,643	\$4,643
	Propane (\$/yr)	\$0	\$0
	Natural Gas (\$/yr)	\$0	\$0
	Number of Years	18	18
	Subtotal Utility Cost per Building	\$83,581	\$83,581

III.	Booster Pump Operation Costs	SRH
	Restoration Period (yrs)	24
	Booster Pump Operating Cost (\$/\forall r)	\$209,583.43
	Total Booster Pump Operating Cost	\$5,030,002
IV.	Infrastructure, Equipment Maintenance,	SRH
	Replacement and Repair Costs	
	Annual Maintenance Cost	\$184,640
	Restoration Period (yrs)	24
	Total Cost	\$4,431,360
v.	Deep Disposal Well MIT Costs	SRH
	Five-year MIT Costs for Disposal Wells	\$17,051.13
	Number of DDWs	10
	Number of MITs per DDW	4
	Total DDW MIT Cost	\$682,045
VI.	Capital Costs	SRH
	*Estimates based on planned expenditures (2013)	
	DDW 7- Rey Ranch DDW connecting pipeline *In support of the revised water balance to add restoration capacity to	
	Smith Ranch network.	\$500,000
	RO Installation (Satellite SR-2)	\$600,000
	SR-HUP Connecting Pipeline	\$742,624
	Total Capital Costs	\$1,842,624
VII.	Vehicle Operation Costs	SRH
	Number of Pickup Trucks (Gas)	20
	Truck Cost (\$/hr)	\$20.67
	Average Operating Time (hrs/yr)	1000
	Restoration and Stability Period (yrs)	25
	Total Vehicle Operation Cost	\$10,334,500
VIII.	Labor Costs	SRH
	Assumptions:	
	Number of Environmental Managers/RSOs	1
	\$/hr	\$65.75
	Number of Restoration Managers	1
	\$/hr	\$57.18
	Number of Environmental Techs/HPTs	4
	\$/hr	\$35.74
	Number of Operators/Laborers	14
	S/hr	\$37.16
	Number of Maintenance Technicians	4
	\$/hr	\$32.88
	Hrs/yr	2080
	Restoration and Stability Period (yrs)	25
	Total Labor Cost	\$47,719,090

## Smith Ranch Highland Uranium Project 2015-2016 Surety Estimate Update

	2015 2010 Survey Estimate opti	ate	
IX.	Irrigation Maintenance and Monitoring	Irrigator No. 1A	Irrigator No. 2
	A. Harvesting Costs		
	Irrigation Area (acres)	55	106
	Harvesting Costs (\$/acre)	\$250	\$250
	Restoration Period (yrs) * Based on timeline to support Smith Ranch restoration activities	24	
	Subtotal Harvesting Costs per Irrigator	\$330,000	\$636,000
	B. Irrigation Monitoring		
	# of Irrigation Fluid Samples/Year	6	6
	\$/sample	\$245	\$245
	# of Vegetation Samples/Year	5	5
	\$/sample	\$270	\$270
	# of Soil Samples/Year	30	34
	\$/sample	\$255	\$255
	# of Soil Water Samples/Year	12	2
	\$/sample	\$150	\$150
	Restoration Period (yrs) * Based on timeline to support Smith Ranch restoration activities	24	
	Subtotal Monitoring Costs per Irrigator	\$294,480	\$282,960
	Subtotal Monitoring and Harvesting Costs per Irrigator	\$624,480	\$918,960
	Total Maintenance and Monitoring Costs	\$1,543,440	
х.	Selenium Plant Operation Costs	SRH	
	Restoration Period (yrs) * Based on timeline to support Smith Ranch restoration activities	24	
	Selenium Plant Operating Cost (\$/yr)	\$142,569	
	<b>Total Selenium Plant Operating Cost</b>	\$3,421,656	
TOTA	L SITE-WIDE RESTORATION COSTS	\$84,959,020	

Well and Drill Hole Abandonment	Mine Unit 1	Mine Unit 2	Mine Unit 3 / 3 Ext	Mine Unit 4/4A	Mine Unit 15
I. Well Abandonment (Wellfields)					
A. Sealing Costs					
Total # of Wells per Wellfield	305	429	580	700	1387
Production, Injection and Perimeter Well Average Depth (ft) Well Abandonment (Sealing) Costs (\$/ft)	500 \$2.75	850 \$2.75	750 \$2.75	850 \$2.75	450 \$2.75
Subtotal Sealing Costs per Wellfield	\$419,375	\$1,002,788	\$1,196,250	\$1,636,250	\$1,716,413
B Casing Removal and Diposal Costs	0.13,575	<b>\$1,</b> 00 <b>2</b> ,700	<b>\$1,170,250</b>	<b>\$1,030,20</b>	41,110,110
Total # of Wells per Wellfield (In Service)	305	429	580	700	1387
# of Previously Abandoned Wells Pending Release	124	100	70	88	121
Total # of Wells for Casing Removal and Disposal	429	529	650	788	1508
Remove and Dispose Casing (\$/well)	\$33	\$33	\$33	\$33	\$33 \$49,764
Subtotal Casing Removal and Diposal Costs per Wellfield Subtotal Well Abandonment Costs per Wellfield	\$14,157 \$433,532	\$17,457 \$1,020,245	\$21,450 \$1,217,700	\$26,004 \$1,662,254	\$1,766,177
Total Well Abandonment Costs	\$21,919,184	₩1,020,243	Ψ1,217,700	\$1,002,234	\$1,700,177
	, , , , , , , , , , , , , , , , , , ,		Mina IInia 2/	Mina IInit	
II. Removal of Contaminated Soil Around Wells	Mine Unit 1	Mine Unit 2	Mine Unit 3/ 3 Ext	Mine Unit 4/4A	Mine Unit 15
# of Production and Injection Wells	255	377	537	610	1301
Removal of Contaminated Soil Around Wells (\$/well)	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$21,340	\$31,550	\$44,940	\$51,049	\$108,876
Total Contaminated Soil Removal/Disposal Costs	\$824,985				
III. Delineation Hole Abandonment	SRH				
A. Subsurface Retained Abandonment Cost					
# of Drill Holes Pending Bond Release					
2012-13	689				
2013-14	593				
2014-2015	776				
Total # of Drill Holes Mobilization Fee	2058 \$1,100.00				
Reclamation Cost per hole (grading/seeding, cap, site location					
40% of Reclamation Costs (GL 12 Appendix L, footnote 6)	\$30.80				
Subtotal Subsurface Retained Abandonment Cost	\$64,486.40				
B. Drill Hole Plug and Abandonment					
# of Projected Drill Holes					
2015-16	1200				
Hole Abandonment (\$/ft) Projected Drill Hole Abandonment; ave depth 860ft	\$3.30				
C. Incidental Costs	\$3,405,600				
Total # of Drill Holes	1200				
Mobilization Fee	\$1,100.00				
Site Location (\$/hole)	\$11				
Capping (\$/hole)	\$11				
Small Site Grading and Seeding (\$/site)	\$55				
Subtotal Incidental Costs	\$93,500				
Total Delineation Hole Abandonment	\$3,563,586				
IV. Waste Disposal Well Abandonment	SR-1	SR-2	SRHUP #6	SRHUP #7	SRHUP #8
A. Well Sealing	10.007	0.006	0.600	2 222	•
Total Depth of Well  Sealing Cost Per Foot	10,097 \$14.03	9,996 \$14.03	9,600 \$14.03	9,900 \$14.03	0 \$14.03
*Sealing costs per foot includes surface reclamation costs	\$14.03	\$14.03	\$14.03	\$14.03	\$14.03
Subtotal Plugging Costs per Well	\$141,661	\$140,244	\$134,688	\$138,897	\$0
B. Pump Dismantling and Decontamination	*****	4-14,-11		4.24,47	•
Number of Pumps	2	2	2	2	0
Pump Dismantling and Disposal Cost	\$2,810	\$2,810	\$2,810	\$2,810	\$2,810
Subtotal Dismantling and Decon Costs per Well	\$5,619.34	\$5,619.34	\$5,619.34	\$5,619.34	\$0.00
C. Tubing String Disposal (NRC-Licensed Facility)  Length of Tubing String (ft)	0 271	0.057	0.010	0.100	^
Length of Tubing String (ft)  Diameter of Tubing String (inches)	8,271 2,875	8,257 2,875	8,910 2.875	9,100 2.875	0 2.875
Volume of Tubing String (fit <sup>3</sup> )	193	192		2.873	2.873
Transportation and Disposal Unit Cost (\$\ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
Subtotal Tubing String Disposal Costs per Well	\$1,410	\$1,408	\$1,519	\$1,552	\$0
Subtotal Cost per Well	\$148,690	\$147,271	\$141,826	\$146,068	\$0
Total Waste Disposal Well Abandonment Costs	\$1,348,149				
TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS	\$27,655,904				

We	ll and Drill Hole Abandonment	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9
I.	Well Abandonment (Wellfields)				
	A. Sealing Costs	Inc in MU-15			
	Total # of Wells per Wellfield	42	502	328	734
	Production, Injection and Perimeter Well Average Depth (ft)	500	950	864	950
	Well Abandonment (Sealing) Costs (\$/ft)	\$2.75	\$2.75	\$2.75	\$2.75
	Subtotal Sealing Costs per Wellfield	\$57,750	\$1,311,475	\$779,328	\$1,917,575
	B Casing Removal and Diposal Costs				
	Total # of Wells per Wellfield (In Service)	42	502	328	734
	# of Previously Abandoned Wells Pending Release	0	128	11	89
	Total # of Wells for Casing Removal and Disposal	42	630	339	823
	Remove and Dispose Casing (\$/well)	\$33	\$33	\$33	\$33
	Subtotal Casing Removal and Diposal Costs per Wellfield	\$1,386	\$20,790	\$11,187	\$27,159
	Subtotal Well Abandonment Costs per Wellfield	\$59,136	\$1,332,265	\$790,515	\$1,944,734
Tot	al Well Abandonment Costs				
II.	Removal of Contaminated Soil Around Wells	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9
	# of Production and Injection Wells	0	451	274	658
	Removal of Contaminated Soil Around Wells (\$/well)	\$83.69	\$83.69	\$83.69	\$83.69
	Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$0	\$37,743	\$22,930	\$55,066
Tot	al Contaminated Soil Removal/Disposal Costs				

#### III. Delineation Hole Abandonment

A. Subsurface Retained Abandonment Cost

# of Drill Holes Pending Bond Release

2012-13 2013-14

2014-2015

Total # of Drill Holes

Mobilization Fee

Reclamation Cost per hole (grading/seeding, cap, site location)

40% of Reclamation Costs (GL 12 Appendix L, footnote 6)

Subtotal Subsurface Retained Abandonment Cost

B. Drill Hole Plug and Abandonment

# of Projected Drill Holes

2015-16

Hole Abandonment (\$/ft)

Projected Drill Hole Abandonment; ave depth 860ft

C. Incidental Costs

Total # of Drill Holes

Mobilization Fee

Site Location (\$/hole)

Capping (\$/hole)

Small Site Grading and Seeding (\$/site)

Subtotal Incidental Costs

#### **Total Delineation Hole Abandonment**

IV. Waste Disposal Well Abandonment	SRHUP #10	REY-1	Morton No. 1-20	Vollman No. 33-27
A. Well Sealing				
Total Depth of Well	9,550	9,950	9,206	14,412
Sealing Cost Per Foot	\$14.03	\$14.03	\$13.62	\$13.62
*Sealing costs per foot includes surface reclamation costs				
Subtotal Plugging Costs per Well	\$133,987	\$139,599	\$125,386	\$196,291
B. Pump Dismantling and Decontamination				
Number of Pumps	2	2	2	2
Pump Dismantling and Disposal Cost	\$2,810	\$2,810	\$2,810	\$2,810
Subtotal Dismantling and Decon Costs per Well	\$5,619.34	\$5,619.34	\$5,619.34	\$5,619.34
C. Tubing String Disposal (NRC-Licensed Facility)				
Length of Tubing String (ft)	8,800	8,217	8,498	8,869
Diameter of Tubing String (inches)	2.875	2.875	2.875	2.875
Volume of Tubing String (ft <sup>3</sup> )	205	191	383	400
Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32
Subtotal Tubing String Disposal Costs per Well	\$1,501	\$1,401	\$2,804	\$2,927
Subtotal Cost per Well	\$141,107	\$146,619	\$133,809	\$204,838
Total Waste Disposal Well Abandonment Costs				

Well and Drill Hole Abandonment	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
I. Well Abandonment (Wellfields)					
A. Sealing Costs					
Total # of Wells per Wellfield	640	388	88	0	445
Production, Injection and Perimeter Well Average Depth (ft)	900	900	800	600	825
Well Abandonment (Sealing) Costs (\$/ft)	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75
Subtotal Sealing Costs per Wellfield	\$1,584,000	\$960,300	\$193,600	\$0	\$1,009,594
B Casing Removal and Diposal Costs					
Total # of Wells per Wellfield (In Service)	640	388	88	0	445
# of Previously Abandoned Wells Pending Release	4	0	19	0	0
Total # of Wells for Casing Removal and Disposal	644	388	107	0	445
Remove and Dispose Casing (\$/well)	\$33	\$33	\$33	\$33	\$33
Subtotal Casing Removal and Diposal Costs per Wellfield	\$21,252	\$12,804	\$3,531	\$0	\$14,685
Subtotal Well Abandonment Costs per Wellfield	\$1,605,252	\$973,104	\$197,131	\$0	\$1,024,279
Total Well Abandonment Costs					
II. Removal of Contaminated Soil Around Wells	Mine Unit 10	Mine Unit 10-Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7
# of Production and Injection Wells	590	340	0	0	381
Removal of Contaminated Soil Around Wells (\$/well)	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$49,375	\$28,453	\$0	\$0	\$31,885
Total Contaminated Soil Removal/Disposal Costs	<b>4</b> ·· <b>,2</b> ··	<b>4,</b>	*-	•	,

#### III. Delineation Hole Abandonment

A. Subsurface Retained Abandonment Cost

# of Drill Holes Pending Bond Release

2012-13

2013-14

2014-2015

Total # of Drill Holes

Mobilization Fee

Reclamation Cost per hole (grading/seeding, cap, site location) 40% of Reclamation Costs (GL 12 Appendix L, footnote 6)

Subtotal Subsurface Retained Abandonment Cost

B. Drill Hole Plug and Abandonment

# of Projected Drill Holes

2015-16

Hole Abandonment (\$/ft)

Projected Drill Hole Abandonment; ave depth 860ft

C. Incidental Costs

Total # of Drill Holes

Mobilization Fee

Site Location (\$/hole)

Capping (\$/hole)

Small Site Grading and Seeding (\$/site)

TOTAL WELL AND DRILL HOLE ABANDONMENT COSTS

Subtotal Incidental Costs

#### Total Delineation Hole Abandonment

IV. Waste Disposal Well Abandonment	SRHUP #9
A. Well Sealing	
Total Depth of Well	9,500
Sealing Cost Per Foot	\$13.62
*Sealing costs per foot includes surface reclamation costs	
Subtotal Plugging Costs per Well	\$129,390
B. Pump Dismantling and Decontamination	
Number of Pumps	2
Pump Dismantling and Disposal Cost	\$2,810
Subtotal Dismantling and Decon Costs per Well	\$5,619.34
C. Tubing String Disposal (NRC-Licensed Facility)	
Length of Tubing String (ft)	8,820
Diameter of Tubing String (inches)	2.875
Volume of Tubing String (ft <sup>3</sup> )	397
Transportation and Disposal Unit Cost (\$/ft3)	\$7.32
Subtotal Tubing String Disposal Costs per Well	\$2,911
Subtotal Cost per Well	\$137,920
Total Waste Disposal Well Abandonment Costs	

Well	and Drill Hole Abandonment	Mine Unit 8	A-Wellfield	B- Wellfield	C- Wellfield	C-22 Pattern	C abandoned UG workings
I.	Well Abandonment (Wellfields)						
	A. Sealing Costs					Inc in MU-C	Inc in MU-C
	Total # of Wells per Wellfield	75	8	392	567	0	0
	Production, Injection and Perimeter Well Average Depth (ft)	825	500	450	550	550	550
	Well Abandonment (Sealing) Costs (\$/ft)	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75
	Subtotal Sealing Costs per Wellfield	\$170,156	\$11,000	\$485,100	\$857,588	\$0	\$0
:	B Casing Removal and Diposal Costs						
	Total # of Wells per Wellfield (In Service)	75	8	392	567	0	0
	# of Previously Abandoned Wells Pending Release	0	54	118	180	0	0
	Total # of Wells for Casing Removal and Disposal	75	62	510	747	0	0
	Remove and Dispose Casing (\$/well)	\$33	\$33	\$33	\$33	\$33	\$33
:	Subtotal Casing Removal and Diposal Costs per Wellfield	\$2,475	\$2,046	\$16,830	\$24,651	\$0	\$0
:	Subtotal Well Abandonment Costs per Wellfield	\$172,631	\$13,046	\$501,930	\$882,239	\$0	\$0
Total	Well Abandonment Costs						
				В-	C-		C Haul
II.	Removal of Contaminated Soil Around Wells	Mine Unit 8	A-Wellfield	Wellfield	Wellfield	C-22 Pattern	Drifts
	# of Production and Injection Wells	0	1	327	464	0	0
	Removal of Contaminated Soil Around Wells (\$/well)	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69
:	Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$0	\$84	\$27,366	\$38,831	\$0	\$0
Total	Contaminated Soil Removal/Disposal Costs			,	,		

#### III. Delineation Hole Abandonment

A. Subsurface Retained Abandonment Cost

# of Drill Holes Pending Bond Release

2012-13

2013-14

2014-2015

Total # of Drill Holes

Mobilization Fee

Reclamation Cost per hole (grading/seeding, cap, site location)

40% of Reclamation Costs (GL 12 Appendix L, footnote 6)

Subtotal Subsurface Retained Abandonment Cost

B. Drill Hole Plug and Abandonment

# of Projected Drill Holes

2015-16

Hole Abandonment (\$/ft)

Projected Drill Hole Abandonment; ave depth 860ft

C. Incidental Costs

Total # of Drill Holes

Mobilization Fee

Site Location (\$/hole)

Capping (\$/hole)

Small Site Grading and Seeding (\$/site)

Subtotal Incidental Costs

#### **Total Delineation Hole Abandonment**

#### IV. Waste Disposal Well Abandonment

A. Well Sealing

Total Depth of Well

Sealing Cost Per Foot

\*Sealing costs per foot includes surface reclamation costs

Subtotal Plugging Costs per Well

B. Pump Dismantling and Decontamination

Number of Pumps

Pump Dismantling and Disposal Cost

Subtotal Dismantling and Decon Costs per Well
C. Tubing String Disposal (NRC-Licensed Facility)

Length of Tubing String (ft)

Diameter of Tubing String (inches)

Volume of Tubing String (ft3)

Transportation and Disposal Unit Cost (\$/ft3)

Subtotal Tubing String Disposal Costs per Well

Subtotal Cost per Well

Total Waste Disposal Well Abandonment Costs

		D-		E-	F-	H-	I-	J-
We	ll and Drill Hole Abandonment	Wellfield	D-Extension	Wellfield	Wellfield	Wellfield	Wellfield	Wellfield
I.	Well Abandonment (Wellfields)							
	A. Sealing Costs		Inc in MU-D					
	Total # of Wells per Wellfield	288	0	438	1470	534	411	410
	Production, Injection and Perimeter Well Average Depth (ft)	600	600	550	650	500	650	540
	Well Abandonment (Sealing) Costs (\$/ft)	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75	\$2.75
	Subtotal Sealing Costs per Wellfield	\$475,200	\$0	\$662,475	\$2,627,625	\$734,250	\$734,663	\$608,850
	B Casing Removal and Diposal Costs							
	Total # of Wells per Wellfield (In Service)	288	0	438	1470	534	411	410
	# of Previously Abandoned Wells Pending Release	86	0	271	330	50	40	20
	Total # of Wells for Casing Removal and Disposal	374	0	709	1800	584	451	430
	Remove and Dispose Casing (\$/well)	\$33	\$33	\$33	\$33	\$33	\$33	\$33
	Subtotal Casing Removal and Diposal Costs per Wellfield	\$12,342	\$0	\$23,397	\$59,400	\$19,272	\$14,883	\$14,190
	Subtotal Well Abandonment Costs per Wellfield	\$487,542	\$0	\$685,872	\$2,687,025	\$753,522	\$749,546	\$623,040
Tot	al Well Abandonment Costs	•		,	. , ,	. ,	•	,
		D-		E-	F-	H-	I-	J-
II.	Removal of Contaminated Soil Around Wells	Wellfield	D-Extension	Wellfield	Wellfield	Wellfield	Wellfield	Wellfield
	# of Production and Injection Wells	234	0	379	1343	456	375	365
	Removal of Contaminated Soil Around Wells (\$/well)	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69	\$83.69
	Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$19,583	\$0	\$31,717	\$112,391	\$38,161	\$31,383	\$30,546
Tot	al Cantaminated Sail Damaval/Dianasal Casta	,	•••		•,- •	,	,	

#### Total Contaminated Soil Removal/Disposal Costs

#### III. Delineation Hole Abandonment

A. Subsurface Retained Abandonment Cost

# of Drill Holes Pending Bond Release

2012-13

2013-14

2014-2015

Total # of Drill Holes

Mobilization Fee

Reclamation Cost per hole (grading/seeding, cap, site location)

40% of Reclamation Costs (GL 12 Appendix L, footnote 6)

Subtotal Subsurface Retained Abandonment Cost

B. Drill Hole Plug and Abandonment

# of Projected Drill Holes

2015-16

Hole Abandonment (\$/ft)

Projected Drill Hole Abandonment; ave depth 860ft

C. Incidental Costs

Total # of Drill Holes

Mobilization Fee

Site Location (\$/hole)

Capping (\$/hole)

Small Site Grading and Seeding (\$/site)

Subtotal Incidental Costs

#### **Total Delineation Hole Abandonment**

#### IV. Waste Disposal Well Abandonment

### A. Well Sealing

Total Depth of Well

Sealing Cost Per Foot

\*Sealing costs per foot includes surface reclamation costs

Subtotal Plugging Costs per Well

#### B. Pump Dismantling and Decontamination

Number of Pumps

Pump Dismantling and Disposal Cost

Subtotal Dismantling and Decon Costs per Well

#### C. Tubing String Disposal (NRC-Licensed Facility)

Length of Tubing String (ft)

Diameter of Tubing String (inches)

Volume of Tubing String (ft<sup>3</sup>)

Transportation and Disposal Unit Cost (\$/ft3)

Subtotal Tubing String Disposal Costs per Well

Subtotal Cost per Well

Total Waste Disposal Well Abandonment Costs

	J-	
Well and Drill Hole Abandonment	Extension	Other
I. Well Abandonment (Wellfields)		
A. Sealing Costs		
Total # of Wells per Wellfield	182	24
Production, Injection and Perimeter Well Average Depth (ft)	540	900
Well Abandonment (Sealing) Costs (\$/ft)	\$2.75	\$2.75
Subtotal Sealing Costs per Wellfield	\$270,270	\$59,400
B Casing Removal and Diposal Costs		
Total # of Wells per Wellfield (In Service)	182	24
# of Previously Abandoned Wells Pending Release	0	0
Total # of Wells for Casing Removal and Disposal	182	24
Remove and Dispose Casing (\$/well)	\$33	\$33
Subtotal Casing Removal and Diposal Costs per Wellfield	\$6,006	\$792
Subtotal Well Abandonment Costs per Wellfield	\$276,276	\$60,192
Total Well Abandonment Costs		
	J-	
II. Removal of Contaminated Soil Around Wells	Extension	
# of Production and Injection Wells	140	
Removal of Contaminated Soil Around Wells (\$/well)	\$83.69	
Subtotal Contaminated Soil Removal/Disposal Costs per Wellfield	\$11,716	

#### Total Contaminated Soil Removal/Disposal Costs

#### III. Delineation Hole Abandonment

A. Subsurface Retained Abandonment Cost

# of Drill Holes Pending Bond Release

2012-13

2013-14

2014-2015

Total # of Drill Holes

Mobilization Fee

Reclamation Cost per hole (grading/seeding, cap, site location)

40% of Reclamation Costs (GL 12 Appendix L, footnote 6)

Subtotal Subsurface Retained Abandonment Cost

B. Drill Hole Plug and Abandonment

# of Projected Drill Holes

2015-16

Hole Abandonment (\$/ft)

Projected Drill Hole Abandonment; ave depth 860ft

C. Incidental Costs

Total # of Drill Holes

Mobilization Fee

Site Location (\$/hole)

Capping (\$/hole)

Small Site Grading and Seeding (\$/site)

Subtotal Incidental Costs

#### **Total Delineation Hole Abandonment**

#### IV. Waste Disposal Well Abandonment

A. Well Sealing

Total Depth of Well

Sealing Cost Per Foot

\*Sealing costs per foot includes surface reclamation costs

Subtotal Plugging Costs per Well

B. Pump Dismantling and Decontamination

Number of Pumps

Pump Dismantling and Disposal Cost

Subtotal Dismantling and Decon Costs per Well

C. Tubing String Disposal (NRC-Licensed Facility)

Length of Tubing String (ft)

Diameter of Tubing String (inches)

Volume of Tubing String (ft<sup>3</sup>)

<u>Transportation and Disposal Unit Cost (\$/ft3)</u> Subtotal Tubing String Disposal Costs per Well

Subtotal Cost per Well

Total Waste Disposal Well Abandonment Costs

			Mine Unit 3/3	Mine Unit						
Welffield Buildings and Equipment Removal and Disposal I. Wellfield Piping	Mine Unit 1	Mine Unit 2	Ext	4/4A	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North	Mine Unit 9	Mine Unit 10
Number of Header Houses per Wellfield Length of Piping per Header House (ft)	6 13800	5 13800	10 13800	11 13800	18 13800	5 13800	9 13800	7 13800	13 13800	9 13 <b>8</b> 00
*Based on 46 wells per header house with 300 ft pipeline per well Approximate Total Length of Piping (ft)	82800	69000	138000	151800	248400	69000	124200	96600	179400	124200
A. Removal and Loading  Wellfield Piping Removal Unit Cost (S/ft of pipe)  Subtotal Wellfield Piping Removal and Loading Costs	\$1.54 \$127,711	\$1.54 \$106,426	\$1.54 \$212,851	\$1.54 \$234,136	\$1.54 \$383,132	\$1,54 \$106,426	\$1.54 \$191,566	\$1.54 \$148,996	\$1.54 \$276,707	\$1.54 \$191,566
B. Transport and Disposal Costs (NRC-Licensed Facility)  Average Diameter of Piping (inches)	2	2	2	2	2	2	2	2	2	2
Chipped Volume <u>Reduction (fl3/ft)</u> Chipped Volume per Welflield (ft <sup>2</sup> ) Volume for Disposal Assyming 10% Void Space (ft <sup>2</sup> )	0.011 888	0.011 740	0.011 1480	0.011 1628	0.011 2663	0.011 740	0.011 1332	0.011 1036	0.011 1923	0.011 1332
Transportation and Disposal Unit Cost (S/fl3)  Subtotal Wellfield Piping Transport and Disposal Costs	977 \$5.77 \$5,637	814 \$5.77 \$4,697	1628 \$5.77 \$9,393	1790 \$5.77 \$10,328	2930 \$5.77 \$16,905	814 \$5.77 \$4.697	1465 \$5.77 \$8,453	1139 \$5.77 \$6,572	2116 \$5.77 \$12,209	1465 \$5.77 \$8,453
Subtotal Welffield Piping Costs per Welffield Total Welffield Piping Costs	\$133,348 <b>\$5,422,719</b>	\$111,123	\$222,244	\$244,464	\$400,037	\$111,123	\$200,019	\$155,568	\$288,916	\$200,019
II. Well Pumps and Tubing  *Pump and tubing removal costs included under ground water restoration labor										
*60% of production/injection wells contain pumps and/or tubing A. Pump and Tubing Transportation and Disposal Number of Production Wells	95	139	232	234	441	Inc in MU-15	171	99	260	210
Number of Injection Wells Number of Monitor Wells	160	238 50	305 40	376 90	860 83	0 42	280 51	175 53	398 69	380 49
Pump Volume     Number of Production Wells with Pumps	57	83	139	140	265	0	103	59	156	126
Pump Volume (fl3) Pump Volume per Wellfield (fl²)	0.43 24,7	0.43 36.1	0.43 60.3	0.43 60.8	0.43 114.6	0.43 0.0	0.43 44.4	0.43 25.7	0.43 67.6	0.43 54.6
Tubing Volume     Average Tubing Length per Well (ft)     *Based on average well depth minus 25 ft	475	825	725	825	425	475	925	839	925	875
Tubing Length per Wellfield (ft) Diameter of Production Well Fiberglass Tubing (inches)	144,400 2	352,275 2	418,325 2	577,500 2	588,200 2	19,950 2	464,350 2	274,353 2	672,475 2	559,125 2
Diameter of Injection Well HDPE Tubing (inches)  Chipped Volume Reduction (fi3/ft)	1.25 0.011	1.25 0.011	1.25 0.011	1.25 0.011	1.25 0.011	1.25 0.011	1.25 0.011	1.25 0.011	1.25 0.011	1.25 0.011
Chipped Volume per Wellfield (ft*) Volume of Pump and Tubing (ft*) Volume for Disposal Assuming Void Space (ft*)	1548 1573 1730	3777 3813 4194	4485 4545 5000	6192 6253 6878	6306 6421 7063	214 214 235	4978 5022 5525	2941 2967 3263	7210 7278 8005	5995 6050 6655
<u>Transportation and Disposal Unit Cost (\$/\$13)</u> Subtotal Pump and Tubing Transport and Disposal Costs Per Wellfield	\$5.77 \$9,982	\$5.77 \$24,198	\$5.77 \$28,849	\$5.77 \$39,684	\$5.77 \$40,752	\$5.77 \$1,356	\$5.77 \$31,878	\$5.77 \$18,827	\$5.77 \$46,187	\$5.77 \$38,398
Total Pump and Tubing Disposal Costs III. Buried Trunkline (Includes \$ for fiber optic cable removal)	\$511,756									
Assumptions: Length of Trunkline Trench (ft)	5075	7600	4790	12565	19085	7500	12000	17198	11565	9050
A. Removal and Loading  Main <u>Pireling Rymoval Unit Cost (S/ft of trench)</u> Subtotal Trunkling Removal and Loading Costs	\$3.08 \$15,655	\$3.08 \$23,444	\$3.08 \$14,776	\$3.08 \$38,761	\$3.08 \$58,873	\$3.08 \$23,136	\$3,08 \$37,018	\$3.08 \$53,052	\$3.08 \$35,676	\$3.08 \$27,917
B. Transport and Disposal Costs (NRC-Licensed Facility)  1. 3" HDPE Trunkline  Note to the Cost of the					0	0	0	0		0
Piping Length (ft) Chipred Volume rer foot of pipe (ft.3/ft) Chipped Volume (ft.)	5075 0.0233 118	7600 0,0233 177	4790 0.0233 112	12565 0.0233 293	0.0233 0	0.0233 0	0.0233 0	0,0233 0	0.0233 0	0.0233
<ol> <li>6" HDPE Trankline Piping Length (ft) Chirped Volume per foot of pipe (ft3/ft)</li> </ol>	2410 0.0834	10000 0,0834	4820 0.0834	7320 0.0834	28170 0.0834	2320 0.0834	2288 0.0834	3466 0.0834	4800 0.0834	6850 0.0834
Chipped Volume (ft')  3. 8" HIPE: Trunkine  Piping Length (ft)	201 4100	834	402 1100	610 4240	2349	193 6266	191	289 948	400 15980	571
riping Lengu (n) <u>Chipped Volume ner foot of ping. (fi3/fi)</u> Chipped Volume (fi <sup>2</sup> )  4. 10° HDPE Trunkline	0.1413 579	0.1413 0	0.1413 155	0.1413 599	0.1413 565	0.1413 885	0.1413 156	0.1413 134	0.1413 2258	0.1413 707
Piping Length (ft) Chipped Volume per foot of pipe (ft3/ft)	0 0.2196	5200 0.2196	3660 0.2196	4680 0.2196	6000 0.2196	1400 0.2196	0 0.2196	1028 0.2196	2800 0.2196	2000 0.2196
Chipped Volume (ft') 5. 12" HDPE Trunkline Piping Length (ft)	1460	1142	804	5270	1317	1080	0	226 2866	4110	439
Chieped Volume for five of ripe, (fl3/fl) Chipped Volume (fr') 6. 14" HDPH Trankline	0.3088 451	0.3088 0	0.3088 0	0.3088 1627	0.3088 0	0.3088 333	0.3088 0	0.3088 885	0.3088 1269	0.3088 0
Piping Length (f) <u>Chipped Volume per foot of pine (ft3/ft)</u> Chipped Volume (ft*)	740 0.3723 276	0.3723 0	0 0.3723 0	0 0,3723 0	0 0.3723 0	6200 0.3723 2308	0.3723 0	0,3723 0	1830 0.3723 681	0 0.3723 0
<ol> <li>16" HDPE Trankline Piping Length (f) Chipped Volume per foot of pipe (fi3/fi)</li> </ol>	1440 0.4864	0 0.4864	0 0.4864	3620 0.4864	0 0.4864	0 0.4864	2010 0.4864	2210 0.4864	1420 0.4864	0 0.4864
Chipped Volume (It*) 8. 18" HDPE Trunkline Piping Length (It)	700	0	0	1761	0 24170	0	978 2086	1075 18600	691 7640	0 6550
Chipped Volume per foot of pipe (#3/ft) Chipped Volume (#2)	0.6155 0	0.6155 0	0.61 <i>5</i> 5 0	0.6155 0	0.6155 14877	0.6155 0	0.6155 1284	0.6155 11448	0.6155 4702	0.6155 4032
Total Chipped Volume (ft*) Volume for Disposal Assuming Void Space (ft*) Transportation and Disposal Unit Cost (\$743).	2325 2558 \$5.77	2153 2368 \$5.77	1472 1620 \$5.77	5918 6509 \$5.77	19108 21019 \$5.77	4028 4431 \$5.77	2608 2869 \$5.77	14057 15463 \$5.77	10617 11678 \$5.77	5748 6323 \$5.77
Subtotal Trunkline Transport and Disposal Costs Trunkline Decommissioning Costs per Wellfield	\$14,759 \$30,414	\$13,663 \$37,107	\$9,347 \$24,123	\$37,555 \$76,316	S121,275 S180,148	\$25,566 \$48,702	\$16,553 \$53,571	\$89,218 \$142,270	\$67,379 \$103,055	\$36,482 \$64,399
Total Trunkline Decommissioning Costs  IV. Wellhead Cover Removal	\$1,477,594									
Number of Wells Well Head Removal, Decentamination, and Disposal Cost	255 \$11.83	377 \$11.83	537 \$11.83	610 \$11.83	1301 \$11.83	0 \$11.83	451 \$11.83	274 \$11.83	658 \$11.83	590 \$11.83
Subtotal Wellhead Removal Costs  Total Well Head Removal and Disposal Costs  V. Header Houses (Includes Booster Stations)	\$3,017 <b>\$</b> 116,648	\$4,461	\$6,354	\$7,218	\$15,395	S0	\$5,337	\$3,242	\$7,786	\$6,981
Booster Houses Total Quantity	0 6	0 5	1 11	1 12	6 24	0 5	3 12	0 7	1 14	0
Average Header House Volume (ft')  A. Removal	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Volume (1°) <u>Demolition Cost</u> Subtotal Building Demolition Costs	9600 \$0.316 \$3,031	8000 \$0.316 \$2,526	17600 \$0.316 \$5,556	19200 \$0.316 \$6,061	38400 \$0,316 \$12,123	8000 \$0.316 \$2,526	19200 \$0.316 \$6,061	\$0.316 \$3,536	22400 \$0.316 \$7,072	14400 \$0.316 \$4,546
B. Survey and Decontamination  Cost per Header House Subtotal Survey and Decontamination Costs	\$634 \$3,804	\$634 \$3,170	\$634 \$6,975	\$634 \$7,609	\$634 \$15,218	\$634 \$3,170	\$634 \$7,609	\$634 \$4,439	\$634 \$8,877	\$634 \$5,707
C. Disposal  Total Volume for Disposal - Incl. 33% Factor (cy)	117	98	215	235	469	98	235	137	274	176
Volume for Disposal Assuming Void Space (cy) Disposal Cost, Landill (cv)	129 \$42.17	108 \$42.17	237 \$42,17	258 \$42.17	516 \$42.17	108 \$42,17	258 \$42,17	151 \$42,17	301 \$42.17	194 \$42,17
Subtotal Off-Site County Landfill Disposal Costs Headerhouse Soil Removal Volume (assumes 10/Wx20Lx2.5D)	\$5,440 500	\$4,554 500	\$9,994 500	\$10,879 500	\$21,758 500	\$4,554 500	\$10,879 500	\$6,367 500	\$12,692 500	\$8,180 500
Ile.(2) Disposal Cost (fk3) Subtotal Ile.(2) Disposal Costs Subtotal Header House Removal and Disposal Costs per Wellfield	\$5.80 \$17,414 \$29,689	\$5.80 \$14,512 \$24,762	\$5.80 \$31,926 \$54,451	\$5.80 \$34,829 \$59,378	\$5.80 \$69,658 \$118,757	\$5.80 \$14,512 \$24,762	\$5.80 \$34,829 \$59,378	\$5.80 \$20,317 \$34,659	\$5.80 \$40,634 \$69,275	\$5.80 \$26,122 \$44,555
Total Header House Removal and Disposal Costs TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	\$1,281,898 \$206,450	\$201,651	\$336,021	\$427,060	\$755,089	\$185,943	\$350,183	\$354,566	\$515,219	\$354,352
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL	\$8,810,615									

Wellfield Buildings and Equipment Removal and Disposal	Mine Unit 10- Ext	Mine Unit 27	Mine Unit 21	Mine Unit 7	A-Wellfleid	B-Wellfield	C-Wellfield	C-22 Pattern	C abandoned	D-Wellfield
I. Wellfield Piping	EAL							Inc in MU-C	Inc in MU-C	D-Tremiela
Number of Header Houses per Wellfield Length of Piping per Header House (ft)	13800		13800	7 13800	13800	18 13800	20 13800			13800
*Based on 46 wells per header house with 300 ft pipeline per well Approximate Total Length of Piping (ft)	82800		0	96600	69000	248400	276000	0		55200
A. Removal and Loading	02000				09000	240400	276000			
Wellfield Piping Removal Unit Cost (S/ft of pipe) Subtotal Wellfield Piping Removal and Loading Costs	\$1.54 \$127,711	\$1.54 \$0	\$1.54 \$0	\$1.54 \$148,996	\$1,54 \$106,426	\$1,54 \$383,132	\$1.54 \$425,702			\$1.54 \$85,140
B. Transport and Disposal Costs (NRC-Licensed Facility)  Average Diameter of Piping (inches)	,	,	,		,	,		2	,	2
Chipped Volume Reduction (ft3/ft)	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Chipped Volume per Wellfield (ft*) Volume for Disposal Assuming 10% Void Space (ft*)	888 977	0	0	1036 1139	740 814	2663 2930	2959 3255	0		592 651
<u>Transportation and Disposal Unit Cost (S/R3)</u> Subtotal Wellfield Piping Transport and Disposal Costs	\$5.77 \$5,637	\$5.77 \$0	\$5.77 \$0	\$5.77 \$6,572	\$5.77 \$4,697	\$5.77 \$16,905	\$5.77 \$18,781	\$5.77 \$0	\$0	\$5.77 \$3,756
Subtotal Wellfield Piping Costs per Wellfield Total Wellfield Piping Costs	\$133,348	\$0	\$0	\$155,568	\$111,123	\$400,037	\$444,483	\$0	\$0	\$88,896
II. Well Pumps and Tubing *Pump and tubing removal costs included under ground water restoration labor										
*60% of production/injection wells contain pumps and/or tubing  A. Pump and Tubing Transportation and Disposal								Inc in MU-C	Inc in MU-C	
Number of Production Wells	120	0	0	134	0	133	204	0	0	91
Number of Injection Wells Number of Monitor Wells	220 48	0 85	0	247 62	1 7	194 64	261 85	0		143 50
Pump Volume     Number of Production Wells with Pumps	72	0	0	80	0	133	204	0	0	91
Pump Volume (ft3) Pump Volume per Wellfield (ft <sup>2</sup> )	0.43 31.2	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
2. Tubing Volume		0.0	0.0	34.8	0.0	57.6	88.1	0.0		39.4
Average Tubing Length per Well (ft)  *Based on average well depth minus 25 ft	875	775	575	800	475	425	525	525	525	575
Tubing Length per Wellfield (ft) Diameter of Production Well Fiberglass Tubing (inches)	339,500 2	65,875 2	0 2	354,400 2	3,800	166,175	288,225	0 2	0 2	163,300 2
Diameter of Injection Well HDPE Tubing (inches) Chipped Volume Reduction (0.1/ft)	1.25 0.011	1,25 0,011	1.25 0.011	1.25 0.011	1.25 0.011	1.25 0.011	1.25 0.011			1.25 0.011
Chipped Volume per Weilfield (ft')  Volume of Pump and Tubing (ft')	3640 3671	706 706	0	3800	41 41	1782	3090	0.011	0	1751
Volume for Disposal Assuming Void Space (ft')	4038	777	0	3835 4218	45	1840 2024	3178 3496	ő	ŏ	1790 1969
<u>Transportation and Disposal Unit Cost (S/ft3)</u> Subtotal Pump and Tubing Transport and Disposal Costs Per Wellfield	\$5.77 \$23,298	\$5.77 \$4,483	\$5.77 \$0	\$5.77 \$24,337	\$5.77 \$260	\$5.77 \$11,678	\$5.77 <b>\$20,</b> 171	\$5.77 \$0	\$5.77 \$0	\$5.77 \$11,361
Total Pump and Tubing Disposal Costs  III. Buried Trunkline (Includes \$ for fiber optic cable removal)										
Assumptions: Length of Trunkling Trench (ft)	5000	0	0	5400	6500	Inc in MU-A	5900	Inc in MU-C 0	Inc in MU-C 0	12000
A. Removal and Loading										
Main Pipeline Removal Unit Cost (S/ft of treach) Subtotal Trunkline Removal and Loading Costs	\$3.08 \$15,424	\$3.08 \$0	\$3.08 \$0	\$3.08 \$16,658	\$3.08 \$20,051	\$3.08 \$0	\$3.08 \$18,200	\$3.08 \$0	\$3.08 \$0	\$3.08 \$37,018
B. Transport and Disposal Costs (NRC-Licensed Facility)     3" HDPE Trunkline										
Piping Length (ft) Chipped Volume per foot of pipe (ft.3/ft)	0.0233	0 0.0233	0.0233	0 0.0233	6500 0.0233	0.0233	5900 0.0233	0.0233	0 0.0233	12000 0.0233
Chipped Volume (ft <sup>2</sup> )  2. 6" HDPE Trunkline	0	0	0	0	151	0	137	0	0	279
Piping Length (ft) Chipped Volume per foot of pipe (ft3/ft)	3500 0.0834	0 0.0834	0 0.0834	0 0.0834	0 0.0834	0 0.0834	0 0.0834	0 0,0834	0 0.0834	0 0.0834
Chipped Volume (ft <sup>2</sup> )  3. 8" HDPE Trunkline	292	0.0054	0.0034	0.0054	0.0034	0.0034	0.0054	0.0054	0.0834	0.0034
Piping Length (ft)	2500 0,1413	0 1412	0 0.1413	4000 0.1413	0 1412	0 1413	0 0.1413	0 1412	0 1412	0 1413
Chipped Volume ner foot of pipe (fl3/fl) Chipped Volume (fl*)	353	0.1413 0	0.1413	565	0.1413 0	0.1413 0	0.1413	0.1413 0	0.1413 0	0.1413 0
4. 10" HDPE Trunkline Piping Length (ft)	1000	0	0	2000	13000	0	0	0	0	0
Chipped Volume per foot of pipe (#3/ff) Chipped Volume (ff*)	0.2196 220	0.2196 0	0.2196 0	0.2196 439	0.2196 2854	0.2196 0	0.2196 0	0.2196 0	0.2196 0	0.2196 0
5. 12" HDPE Trunkline Piping Length (ft)	0	0	0	0	0	0	11800	0	0	24000
Chipped Volume per foot of pipe (fl3/fl) Chipped Volume (fl*)	0.3088 0	0.3088 0	0.3088	0.3088	0.3088 0	0.3088	0.3088 3644	0.3088 0	0.3088	0.3088 7411
6. 14" HDPE Trunkline Piping Length (ft)	0	0	0	4000	0	0	0	0	0	0
Chipped Volume per foot of pipe (ft3/ft) Chipped Volume (ft*)	0,3723 0	0.3723 0	0.3723 0	0.3723 1489	0.3723 0	0.3723 0	0.37 <u>2</u> 3 0	0.3723 0	0.3723 0	0.3723 0
7. 16" HDPE Trunkline Piping Length (ft)	0	0	0	0	0	0	0	0	0	0
Chipped Volume per foot of pipe: (fl.3/fl) Chipped Volume (fl.)	0.4864 0	0.4864 0	0.4864 0	0.4864 0	0.4864 0	0.4864	0.4864 0	0.4864 0	0.4864	0.4864 0
8. 18" HDPE Trunkline Piping Length (ft)	3100	0	0	0	0	0	0	0	0	0
Chipped Volume per foot of pipe (ft3/ft) Chipped Volume (ft²)	0.6155 1908	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155
Total Chipped Volume (ft')  Volume for Disposal Assuming Void Space (ft')	2773 3050	0	0	2494 2743	3006 3306	0	3781 4159	0	0	7691 8460
Transportation and Disposal Unit Cost (\$/f(3))	\$5.77	\$5.77 \$0	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77
Subtotal Trunkline Transport and Disposal Costs Trunkline Decommissioning Costs per Wellfield	\$17,598 \$33,022	\$0 \$0	\$0 \$0	\$15,826 \$32,484	\$19,075 \$39,126	\$0 \$0	\$23,996 \$42,196	S0 S0		\$48,812 \$85,830
Total Trunkline Decommissioning Costs  IV. Wellhead Cover Removal								Inc in MU-C	Inc in MU-C	
Number of Wells Well Head Removal, Decontamination, and Disposal Cost	340 \$11.83	0 \$11.83	0 \$11.83	381 S11.83	1 S11.83	327 \$11.83	464 \$11.83	0 \$11.83	0	234 S11.83
Subtotal Wellhead Removal Costs	\$4,023	\$0	S0	\$4,508	\$12	\$3,869	\$5,491	\$0		\$2,769
Total Well Head Removal and Disposal Costs  V. Header Houses (Includes Booster Stations)										
Booster Houses Total Quantity	1 7	0	0	0	0 5	0 18	1 21	0		0
Average Header House Volume (ft')  A. Removal	1600	1600	1600	1600	1600	1600	1600	1600		1600
Total Volume (ft*)	11200	0	0	11200	8000	28800	33600	0		6400
Demolition Cost Subtotal Building Demolition Costs	\$0.316 \$3,536		\$0.316 \$0	\$0.316 \$3,536	\$0.316 \$2,526	\$0.316 \$9.092	\$0.316 \$10,608	\$0.316 \$0	\$0.316 \$0	.\$0.316 \$2,020
B. Survey and Decontamination <u>Cost per Header House</u>	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634
Subtotal Survey and Decontamination Costs C. Disposal	\$4,439	\$0	\$0	\$4,439	\$3,170	\$11,413	\$13,316	\$0	\$0	\$2,536
Total Volume for Disposal - Incl. 33% Factor (cy) Volume for Disposal Assuming Void Space (cy)	137 151	0	0	137 151	98 108	352 387	411 452	0		78 86
Disposal Cost, Landfill (ey)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
Subtotal Off-Site County Landfill Disposal Costs Headerhouse Soil Removal Volume (assumes 10 Wx20 Lx2.5D)	\$6,367 500	\$0 500	\$0 500	\$6,367 500	\$4,554 500	\$16,319 500	\$19,059 500	\$0 500		\$3,626 500
11e.(2) Disposal Cost (ft3) Subtotal 11e.(2) Disposal Costs	\$5.80 \$20,317		\$5.80 \$0	\$5.80 \$20,317	\$5.80 \$14,512	\$5.80 \$52,243	\$5.80 \$60,951	\$5.80 \$0		\$5.80 \$11,610
Subtotal Header House Removal and Disposal Costs per Wellfield Total Header House Removal and Disposal Costs	\$34,659		\$0	\$34,659	\$24,762	\$89,067	\$103,934	\$0		\$19,792
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD	\$228,350	\$4,483	S0	\$251,556	\$175,283	\$504,651	\$616,275	so	S0	\$208,648
TOTAL WELLFIELD BUILDINGS AND EQUIPMENT REMOVAL										

Marie of Field of Wilson   1988   1	Welifield Buildings and Equipment Removal and Disposal  I. Welifield Piping	D-Extension	E-Wellfield	F-Wellfield	H-Wellfield	I-Wellfield	J-Wellfield	J-Extension
Part	Number of Header Houses per Wellfield							
Part	*Based on 46 wells per header house with 300 ft pipeline per well							
Part		41400	207000	593400	138000	82800	124200	69000
Page								
Chees   Cheese   Ch	B. Transport and Disposal Costs (NRC-Licensed Facility)				3212,031			
Water for Depend Assemble (1967-1004 Speed)   1968   2964   1969   196	Chipped Volume Reduction (fl3/fl)	0.011	0.011	0.011		0.011	0.011	0.011
Part								
Section   1966   1967   1968	Transportation and Disposal Unit Cost (S/ft3)				\$5.77	\$5.77	\$5.77	\$5.77
Name	Subtotal Wellfield Piping Costs per Wellfield							
A. Pump and The Improvement analyses   A. Pump and The	II. Well Pumps and Tubing							
Page								
Number of Pipeline Wells	A. Pump and Tubing Transportation and Disposal		140	640	160	124	100	
Name of Personal Profession   1								
Number of Production Wills with Pumper   0		0	59	113	74	34	45	42
Pearly Volume of Welfield (PT)	Number of Production Wells with Pumps							
Marine Problem	Pump Volume per Wellfield (ff*)							
Page		575	525	625	475	625	515	515
Diameter of Production Will Finespier Training (incluse)   2   2   2   3   2   3   3   3   3   3	*Based on average well depth minus 25 ft							
Chiese Color Scheme (1996)   10   10   10   10   10   10   10   1		-						
Cargon Vellania (Pr. 1998)   Cargon Vellani								
Visione for Dipolary Almanifer Vision Space (17)	Chipped Volume per Wellfield (ft')	0	2465	9756	2699	2741	2264	1005
Table   Part	Volume for Disposal Assuming Void Space (ft*)	Ō	2781	10993	3049	3080	2549	1129
Teal Proposition Fromitries (Part Proposition From (Part Part Proposition From (Part Part Proposition From (Part Part Part Part Part Part Part Part								
Company   Comp								
Modification   Modi	Assumptions:							
Main Prefette Removal Latin Cast Carl Entermach   \$3.08   \$3	•	5500	0	11700	13200	10750	2500	2000
B.   Tamport and Disposal Costs (NRC-Licensed Resilies)	Main Pipeline Removal Unit Cost (5/ft of trench)							
Figus   Lamp (10)	B. Transport and Disposal Costs (NRC-Licensed Facility)	316,966	30	236,092	340,/19	\$33,162	3/,/12	\$6,170
Chipped Volume (ff)	Piping Length (ft)	5500		11700	13200	10750	0	0
C   F   HOPE Trunkline	Chipped Volume per foot of pipe (83/ft) Chipped Volume (ft')							
Chipsed Volumes (r)   1977   20	2. 6" HDPE Trunkline		٥					0
Prime   Length (10)	Chipped Volume per foot of pipe (fl3/fl)	0.0834		0.0834	0.0834	0.0834	0.0834	0.0834
Climent Volume (F)	3. 8" HDPE Trunkline			_	-		-	_
1.   Pipife Length (1)	Chipped Volume per foot of pipe (fl3/ft)	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413	0.1413
Chipmes   Chip		0	0	0	0	0	0	0
Chipped Volume (fi)								
Piping Lample (10)	Chipped Volume (ft <sup>2</sup> )							
Chipped Volume (ft)	Piping Length (ft)							
Piping Length (ft)	Chipped Volume (ft')							
Chipped Volume (ft)	Piping Length (ft)							
7. 16' HIDPET PURIALINE Fining Length (ft) Fining L								
Chinped Volume per Rect of Inic (R-PI)**         0.4864         0.4864         0.4864         0.4864         0.4864         0.4864         0.4864         0.4864         0.4864         0.4864         0.4864         0.4864         0.4864         0.4864         0.4865         0.818* IRDPE Trumsline         0 <td></td> <td>0</td> <td>0</td> <td>23400</td> <td>26400</td> <td>8500</td> <td>0</td> <td>0</td>		0	0	23400	26400	8500	0	0
8. 18" HDPE Trunkline Piping Length (12") Pipi	Chipped Volume per foot of pipe (ft3/ft)							
Chirped Volume (r)* (r)         0.6155	8. 18" HDPE Trunkline							
Total Chipped Volume (ft)   1045   0   20366   22977   7964   1057   793   1050   10	Chipped Volume per foot of pipe (ft3/ft)	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155	0.6155
Trunspreading and Disposal Costs   S.777   S.777   S.777   S.577   S	Total Chipped Volume (ft')	1045	ō	20366	22977	7964	1057	793
Subtoal Trunkline Transport and Disposal Costs   School	Volume for Disposal Assuming Void Space (ft') <u>Transportation and Disposal Unit Cost (S/H3)</u>							
Total Volume (R)   Survey and Decontamination Costs   Survey and Survey and Decontamination	Subtotal Trunkline Transport and Disposal Costs							
Number of Wells   1375   1365   140   1406   1507   1518   1375   1565   140   1406   1507   1508   140   1508   1518	Total Trunkline Decommissioning Costs	323,601	30	3103,332	3160,330	303,/11	314,410	311,201
Michael Removal Decontamination   Salta   Sa		0	379	1343	456	375	365	140
Total Well Head Removal and Disposal Costs   V.   Header Houses (Includes Booster Stations)	Well Head Removal, Decontamination, and Disposal Cost	\$11.83	\$11.83	\$11.83	\$11.83	\$11.83	\$11.83	\$11.83
Booster Houses		20	34,485	315,892	33,396	34,437	34,319	21,037
Total Quantity		0	0	0	,	0	0	n
A. Removal Total Volume (ft') Ageo 24000 68800 17600 9600 14400 8000 Demolitiva Closs Subtotal Building Demolition Costs \$1,515 \$7,577 \$21,720 \$3,536 \$3,016 \$3,016 \$0,316	Total Quantity	3	15	43	11	6	9	5
Demolition Cost	A. Removal							
Subtotal Building Demolition Costs   S1,515   S7,577   S21,720   S5,556   S3,031   S4,546   S2,256   B. Survey and Decontamination   S1,525   S6,347   S6,348   S8,347   S8,								
Scale   Scal	Subtotal Building Demolition Costs	\$1,515	\$7,577		\$5,556	\$3,031	\$4,546	\$2,526
C. Disposal Total Volume for Disposal - Incl. 33% Factor (cy) 59 293 841 215 117 176 98 Volume for Disposal Assuming Void Space (cy) 65 323 925 237 129 194 108 Disposal Creat, Landfill (cy) 542.17 5	Cost per Header House							
Volume for Disposal Assuming Void Space (cgy)   65   323   925   237   129   194   108	C. Disposal							
Section   Sect								
Headerhouse Soil Removal Volume (assumes 10Wx20Tx2.5TD)   500   500   500   500   500   500   500   500   16 (2D) Disposal Clost (181)   500	Disposal Cost, Landfill (cv)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
Subtotal 11e.(2) Disposal Costs         \$8.707         \$43,356         \$124,804         \$31,926         \$17,414         \$26,122         \$14,512           Subtotal Header House Removal and Disposal Costs per Wellfield         \$14,865         \$74,244         \$212,793         \$54,451         \$29,689         \$44,555         \$24,762           Total Reader House Removal and Disposal Costs           TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD         \$105,137         \$428,136         \$1,413,101         \$486,233         \$268,956         \$278,016         \$155,257	Headerhouse Soil Removal Volume (assumes 10Wx20Lx2.5D)	500	500	500	500	500	500	500
Subtotal Header House Removal and Disposal Costs per Wellfield         \$14,865         \$74,244         \$212,793         \$54,451         \$29,689         \$44,555         \$24,762           Total Header House Removal and Disposal Costs         TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD         \$105,137         \$428,136         \$1,413,101         \$486,233         \$268,956         \$278,016         \$155,257								
TOTAL REMOVAL AND DISPOSAL COSTS PER WELLFIELD \$105,137 \$428,136 \$1,413,101 \$486,233 \$268,956 \$278,016 \$155,257	Subtotal Header House Removal and Disposal Costs per Wellfield							
		\$105,137	\$428,136	\$1,413,101	\$486,233	\$268,956	\$278,016	\$155,257
								-

Wellfield and Satellite Surface Reclamation	Mine Unit 1	Mine Unit 2	Mine Unit 3/ 3 Ext	Mine Unit 4/4A
I. Wellfield Pattern Area, and Road Reclamation  Area (acres)	50.9	104.3	99.8	125.1
*Assume wellfield pattern area X 2	50.9	104.5	77.0	123.1
Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$330
Subtotal Pattern Area and Road Reclamation Costs	\$16,790	\$34,412	\$32,947	\$41,290
Total Wellfield Area Reclamation Costs	\$504,563			
II. Wellfield Road Reclamation				
Road Construction				
Length of Wellfield Roads (1000 ft)	6.2	10.1	11.2	92.4
Wellfield Road Reclamation Unit Cost (\$/1000 ft)	\$1,311	\$1,311	\$1,311	\$1,311
Subtotal Wellfield Road Reclamation Costs	\$8,131	\$13,246	\$14,688	\$121,178
Total Wellfield Road Reclamation Costs	\$409,564		···	
II. Laydown area reclamation				
Area of Disturbance (acres)	1	1	2	2
Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67
Surface Grade: Level Ground				
Average Length of Topsoil Haul (ft)	500	500	500	500
A. Ripping Overburden with Dozer				
Ripping Cost (per acre)	\$1,381	\$1,381	\$1,381	\$1,38
Subtotal Ripping Costs	\$1,381	\$1,381	\$2,763	\$2,76
B. Topsoil Application with Scraper	1.001	1.001	2 162	2.16
Volume of Topsoil Removed (cy)	1,081	1,081	2,162	2,162
Moving Materials (0% Grade)	\$1.21	\$1.21	\$1.21	\$1.2
Subtotal Topsoil Application Costs  C. Discing and Seeding	\$1,306	\$1,306	\$2,611	\$2,61
Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$330
Subtotal Discing/Seeding Costs	\$330	\$330	\$660	\$660
Subtotal Surface Reclamation Costs per WF laydown area	\$3,017	\$3,017	\$6,034	\$6,034
Total Wellfield Laydown Area Reclamation Costs	\$75,424	Ψ5,017	\$0,034	\$0,05
SUBTOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	\$27,938	\$50,675	\$53,669	\$168,502
TOTAL WELLFIELD SURFACE RECLAMATION COSTS	\$989,551			, , , , , , , , , , , , , , , , , , ,
V. Fence Removal			• • • • • • • • • • • • • • • • • • • •	-
Length of Fencing (ft)	16,487	11,580	7,388	25,04
Fence Removal Costs	\$0.42	\$0.42	\$0.42	\$0.42
Subtotal Fence Removal Costs per Wellfield	\$6,892	\$4,840	\$3,088	\$10,470
Total Fence Removal Costs	\$136,355		-	
/. Satellite Area Reclamation	SR-1	SR-2	REY	Satellite No.1
Assumptions:				
Area of Disturbance (acres)	2.70	5.00	5.00	1.0
Average Depth of Stripped Topsoil (ft)	1	1	1	
Surface Grade: Level Ground		<b>#</b> 00	700	100
Average Length of Topsoil Haul (ft)	1000	500	500	100
A. Ripping Overburden with Dozer	61 201 27	A1 201 07	61 201 27	e1 201 2
Ripping Cost (per acre)	\$1,381.27	\$1,381.27 \$6,906	\$1,381.27 \$6,906	\$1,381.2° \$1,38
Subtotal Ripping Costs  B. Topsoil Application with Scraper	\$3,729	\$6,900	\$0,900	\$1,30
Volume of Topsoil Removed (cy)	4356	8067	8067	161:
Moving Materials (0% Grade)	\$1.44			
Subtotal Topsoil Application Costs	\$6,282		\$11,633	
C. Discing and Seeding	+ 5,252	,		,
Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$33
Subtotal Discing/Seeding Costs	\$891	\$1,650		
Subtotal Surface Reclamation Costs per Location	\$10,902			
Total Satellite Building Area Reclamation Costs	\$79,844			
TOTAL WELLFIELD AND SATELLITE SURFACE				
RECLAMATION COSTS	\$1,205,750			

Wellf	ield and Satellite Surface Reclamation	Mine Unit 15	Mine Unit 15A	Mine Unit K	K-North
I,	Wellfield Pattern Area, and Road Reclamation				
	Area (acres)	117.3	44.5	83.3	65.
	*Assume wellfield pattern area X 2				
	Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$33
T 4 1	Subtotal Pattern Area and Road Reclamation Costs	\$38,702	\$14,698	\$27,482	\$21,58
Total	Wellfield Area Reclamation Costs				
II.	Wellfield Road Reclamation				
	Road Construction				
	Length of Wellfield Roads (1000 ft)	19.8	13.6	9.6	2.
	Wellfield Road Reclamation Unit Cost (\$/1000 ft)	\$1,311	\$1,311	\$1,311	\$1,31
	Subtotal Wellfield Road Reclamation Costs	\$25,967	\$17,836	\$12,590	\$3,67
<b>Fotal</b>	Wellfield Road Reclamation Costs			-	
III.	Laydown area reclamation				
	Area of Disturbance (acres)	1	1	2	
	Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.6
	Surface Grade: Level Ground				
	Average Length of Topsoil Haul (ft)	500	500	500	50
	A. Ripping Overburden with Dozer				
	Ripping Cost (per acre)	\$1,381	\$1,381	\$1,381	\$1,38
	Subtotal Ripping Costs	\$1,381	\$1,381	\$2,072	\$2,07
	B. Topsoil Application with Scraper	1.001	4.004	1.601	1.00
	Volume of Topsoil Removed (cy)	1,081	1,081	1,621	1,62
	Moving Materials (0% Grade)	\$1.21	\$1.21	\$1.21	\$1.2
	Subtotal Topsoil Application Costs	\$1,306	\$1,306	\$1,958	\$1,95
	C. Discing and Seeding Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$33
	Subtotal Discing/Seeding Costs	\$330	\$330		\$33 \$49
	Subtotal Surface Reclamation Costs per WF laydown area	\$3,017	\$3,017	\$4,525	\$4,52
	Total Wellfield Laydown Area Reclamation Costs	\$5,017	\$3,017	94,323	¥ <del>+,</del> 52
SURT	TOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	\$67,686	\$35,551	\$44,597	\$29,78
	AL WELLFIELD SURFACE RECLAMATION COSTS		,,,,,,,	,,,,	
īv.	Fence Removal				-
	Length of Fencing (ft)	7,074	0	23,271	23,27
	Fence Removal Costs	\$0.42	\$0.42	\$0.42	\$0.4
	Subtotal Fence Removal Costs per Wellfield	\$2,957	\$0	\$9,727	\$9,72
	Fence Removal Costs				
<b>Fotal</b>				C DI 4	··
	Satellite Area Reclamation	Satellite No 2	Satellite No 3		
	Satellite Area Reclamation Assumptions:	Satellite No.2	Satellite No.3	Se Plant	_
	Assumptions:				
	Assumptions: Area of Disturbance (acres)	Satellite No.2 3.00 0.67	2.50 0.67		
	Assumptions:	3.00	2.50	2.00	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)	3.00	2.50	2.00	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground	3.00 0.67	2.50 0.67	2.00	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)	3.00 0.67	2.50 0.67	2.00	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)  A. Ripping Overburden with Dozer  Ripping Cost (per acre)  Subtotal Ripping Costs	3.00 0.67 500	2.50 0.67 500	2.00 0.67 500	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)  A. Ripping Overburden with Dozer  Ripping Cost (per acre)  Subtotal Ripping Costs  B. Topsoil Application with Scraper	3.00 0.67 500 \$1,381.27	2.50 0.67 500 \$1,381.27 \$3,453	2.00 0.67 500 \$1,381.27 \$2,763	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)  A. Ripping Overburden with Dozer  Ripping Cost (per acre)  Subtotal Ripping Costs  B. Topsoil Application with Scraper  Volume of Topsoil Removed (cy)	3.00 0.67 500 \$1,381.27 \$4,144	2.50 0.67 500 \$1,381.27 \$3,453	2.00 0.67 500 \$1,381.27 \$2,763	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)  A. Ripping Overburden with Dozer  Ripping Cost (per acre)  Subtotal Ripping Costs  B. Topsoil Application with Scraper  Volume of Topsoil Removed (cy)  Moving Materials (0% Grade)	3.00 0.67 500 \$1,381.27 \$4,144 3243 \$1.44	2.50 0.67 500 \$1,381.27 \$3,453 2702 \$1.44	2.00 0.67 500 \$1,381.27 \$2,763 2162 \$1.44	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)  A. Ripping Overburden with Dozer  Ripping Cost (per acre)  Subtotal Ripping Costs  B. Topsoil Application with Scraper  Volume of Topsoil Removed (cy)  Moving Materials (0% Grade)  Subtotal Topsoil Application Costs	3.00 0.67 500 \$1,381.27 \$4,144	2.50 0.67 500 \$1,381.27 \$3,453	2.00 0.67 500 \$1,381.27 \$2,763	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)  A. Ripping Overburden with Dozer  Ripping Cost (per acre)  Subtotal Ripping Costs  B. Topsoil Application with Scraper  Volume of Topsoil Removed (cy)  Moving Materials (0% Grade)  Subtotal Topsoil Application Costs  C. Discing and Seeding	3.00 0.67 500 \$1,381.27 \$4,144 3243 \$1.44 \$4,676	2.50 0.67 500 \$1,381.27 \$3,453 2702 \$1.44 \$3,897	2.00 0.67 500 \$1,381.27 \$2,763 2162 \$1.44 \$3,118	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)  A. Ripping Overburden with Dozer  Ripping Cost (per acre)  Subtotal Ripping Costs  B. Topsoil Application with Scraper  Volume of Topsoil Removed (cy)  Moving Materials (0% Grade)  Subtotal Topsoil Application Costs  C. Discing and Seeding  Discing/Seeding Unit Cost (\$/acre)	3.00 0.67 500 \$1,381.27 \$4,144 3243 \$1.44 \$4,676	2.50 0.67 500 \$1,381.27 \$3,453 2702 \$1.44 \$3,897	2.00 0.67 500 \$1,381.27 \$2,763 2162 \$1.44 \$3,118	
Fotal V.	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)  A. Ripping Overburden with Dozer  Ripping Cost (per acre)  Subtotal Ripping Costs  B. Topsoil Application with Scraper  Volume of Topsoil Removed (cy)  Moving Materials (0% Grade)  Subtotal Topsoil Application Costs  C. Discing and Seeding  Discing/Seeding Unit Cost (\$/acre)  Subtotal Discing/Seeding Costs	3.00 0.67 500 \$1,381.27 \$4,144 3243 \$1.44 \$4,676 \$330 \$990	2.50 0.67 500 \$1,381.27 \$3,453 2702 \$1.44 \$3,897 \$330 \$825	2.00 0.67 500 \$1,381.27 \$2,763 2162 \$1.44 \$3,118 \$330 \$660	
	Assumptions:  Area of Disturbance (acres)  Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground  Average Length of Topsoil Haul (ft)  A. Ripping Overburden with Dozer  Ripping Cost (per acre)  Subtotal Ripping Costs  B. Topsoil Application with Scraper  Volume of Topsoil Removed (cy)  Moving Materials (0% Grade)  Subtotal Topsoil Application Costs  C. Discing and Seeding  Discing/Seeding Unit Cost (\$/acre)	3.00 0.67 500 \$1,381.27 \$4,144 3243 \$1.44 \$4,676	2.50 0.67 500 \$1,381.27 \$3,453 2702 \$1.44 \$3,897	2.00 0.67 500 \$1,381.27 \$2,763 2162 \$1.44 \$3,118 \$330 \$660	

Wellfi	ield a	ınd	Satellite Surface Reclamation	Mine Unit 9	Mine Unit 10	Mine Unit 10- Ext	Mine Unit 27
I.	We	llfie	ld Pattern Area, and Road Reclamation		-		
		Are	ea (acres)	88.7	99.5	52.0	0.0
	<u> </u>		ssume wellfield pattern area X 2				
			scing/Seeding Unit Cost (\$/acre)	\$330	\$330		
			Pattern Area and Road Reclamation Costs	\$29,264	\$32,842	\$17,160	\$0
Total	Well	tielo	Area Reclamation Costs	-			
П.	We		ld Road Reclamation				
		Ro	ad Construction				
			Length of Wellfield Roads (1000 ft)	12.7	16.2		
		<u> </u>	Wellfield Road Reclamation Unit Cost (\$/1000 ft)	\$1,311	\$1,311	\$1,311	\$1,311
			Wellfield Road Reclamation Costs	\$16,655	\$21,245	\$10,492	\$0
Total '	Well	tielo	l Road Reclamation Costs				
III.	Lay	dov	vn area reclamation				
			Area of Disturbance (acres)	1	1	1	0
			Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.67
			Surface Grade: Level Ground				
			Average Length of Topsoil Haul (ft)	500	500	500	500
		A.	Ripping Overburden with Dozer				
			Ripping Cost (per acre)	\$1,381	\$1,381	\$1,381	\$1,381
		<u> </u>	Subtotal Ripping Costs	\$1,381	\$1,381	\$1,381	\$0
		B.					
		<b>Ļ</b> _	Volume of Topsoil Removed (cy)	1,081	1,081	1,081	0
	-	_	Moving Materials (0% Grade)	\$1.21	\$1.21	\$1.21	\$1.21
	┼		Subtotal Topsoil Application Costs	\$1,306	\$1,306	\$1,306	\$0
		C.	Discing and Seeding  Discing/Seeding Unit Cost (\$/acre)	6220	6220	6220	\$220
			Subtotal Discing/Seeding Costs	\$330 \$330	\$330 \$330		
		Sul	ototal Surface Reclamation Costs per WF laydown area	\$3,017	\$3,017	\$3,017	\$0
	Tot		Vellfield Laydown Area Reclamation Costs	\$3,017	\$3,017	\$3,017	<del></del>
SUBT			SURFACE RECLAMATION COSTS PER WELLFIELD	\$48,936	\$57,104	\$30,669	
			LFIELD SURFACE RECLAMATION COSTS		,		
IV.	Fen	ice I	Removal				
			ngth of Fencing (ft)	21,887	21,595		19,732
			nce Removal Costs	\$0.42	\$0.42	\$0.42	\$0.42
			Fence Removal Costs per Wellfield	\$9,149	\$9,027	\$4,287	\$8,248
Total 1	Fenc	e R	emoval Costs				
v.	Sat	ellit	e Area Reclamation				
		Ass	sumptions:				
			Area of Disturbance (acres)				
			Average Depth of Stripped Topsoil (ft)				
			Surface Grade: Level Ground				
			Average Length of Topsoil Haul (ft)				
			Ripping Overburden with Dozer				
		A.	11 0				
		A.	Ripping Cost (per acre)				
			Ripping Cost (per acre) Subtotal Ripping Costs				
			Ripping Cost (per acre) Subtotal Ripping Costs Topsoil Application with Scraper				
			Ripping Cost (per acre) Subtotal Ripping Costs Topsoil Application with Scraper Volume of Topsoil Removed (cy)				
			Ripping Cost (per acre) Subtotal Ripping Costs Topsoil Application with Scraper Volume of Topsoil Removed (cy) Moving Materials (0% Grade)				
		В.	Ripping Cost (per acre) Subtotal Ripping Costs Topsoil Application with Scraper Volume of Topsoil Removed (cy) Moving Materials (0% Grade) Subtotal Topsoil Application Costs				
		В.	Ripping Cost (per acre) Subtotal Ripping Costs Topsoil Application with Scraper Volume of Topsoil Removed (cy) Moving Materials (0% Grade) Subtotal Topsoil Application Costs Discing and Seeding				
		В.	Ripping Cost (per acre) Subtotal Ripping Costs  Topsoil Application with Scraper  Volume of Topsoil Removed (cy)  Moving Materials (0% Grade) Subtotal Topsoil Application Costs Discing and Seeding  Discing/Seeding Unit Cost (\$/acre)				
		В.	Ripping Cost (per acre)  Subtotal Ripping Costs  Topsoil Application with Scraper  Volume of Topsoil Removed (cy)  Moving Materials (0% Grade)  Subtotal Topsoil Application Costs  Discing and Seeding  Discing/Seeding Unit Cost (\$/acre)  Subtotal Discing/Seeding Costs				
	Tot	B. C.	Ripping Cost (per acre) Subtotal Ripping Costs  Topsoil Application with Scraper  Volume of Topsoil Removed (cy)  Moving Materials (0% Grade) Subtotal Topsoil Application Costs Discing and Seeding  Discing/Seeding Unit Cost (\$/acre)				

venne	ld a	nd :	Satellite Surface Reclamation	Mine Unit 21	Mine Unit 7	Mine Unit-A/B	Mine Unit-C
	We	llfie	ld Pattern Area, and Road Reclamation				
			ea (acres)	0.0	68.4	37.9	63.
			ssume wellfield pattern area X 2				
			scing/Seeding Unit Cost (\$/acre)	\$330	\$330		
			l Pattern Area and Road Reclamation Costs	\$0	\$22,579	\$12,500	\$21,09
otal V	Vell	field	1 Area Reclamation Costs				
I.	We	Ufie	ld Road Reclamation		-		
		Ro	ad Construction				
			Length of Wellfield Roads (1000 ft)	0	16.2		
			Wellfield Road Reclamation Unit Cost (\$/1000 ft)	\$1,311	\$1,311		
			l Wellfield Road Reclamation Costs	\$0	\$21,245	\$16,787	\$14,81
otal V	Vell	field	i Road Reclamation Costs				
II.	Lav	dov	vn area reclamation	-			
			Area of Disturbance (acres)	0	1	1	
			Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.6
			Surface Grade: Level Ground				
			Average Length of Topsoil Haul (ft)	500	500	500	50
		A.	Ripping Overburden with Dozer				
			Ripping Cost (per acre)	\$1,381	\$1,381	\$1,381	\$1,38
			Subtotal Ripping Costs	\$0	\$1,381	\$1,381	\$1,38
		B.	T T				
			Volume of Topsoil Removed (cy)	0	1,081	1,081	1,08
			Moving Materials (0% Grade)	\$1.21	\$1.21	\$1.21	\$1.2
			Subtotal Topsoil Application Costs	\$0	\$1,306	\$1,306	\$1,30
		C.	Discing and Seeding			***	
			Discing/Seeding Unit Cost (\$/acre)	\$330	\$330		
		C1	Subtotal Discing/Seeding Costs	\$0	\$330		
			ototal Surface Reclamation Costs per WF laydown area Cellfield Laydown Area Reclamation Costs	\$0	\$3,017	\$3,017 \$30,170	————— <u> </u>
			URFACE RECLAMATION COSTS PER WELLFIELD	\$0	\$46,841	\$30,170 \$32,304	
			LFIELD SURFACE RECLAMATION COSTS		ψ+0,0+1	ψ32,304	ψ30,73
v.	Fen	co I	Removal				
*	I CII	_	ngth of Fencing (ft)	0	8,674	13,720	18,69
			ace Removal Costs	\$0.42	\$0.42		
	Sub		l Fence Removal Costs per Wellfield	\$0	\$3,626		
			emoval Costs			,	
/.	Sate		e Area Reclamation				
•			sumptions:				_
		1 1.5	Area of Disturbance (acres)				
			Average Depth of Stripped Topsoil (ft)				
			Surface Grade: Level Ground	-			
			Average Length of Topsoil Haul (ft)				
		A.	Ripping Overburden with Dozer				
			Ripping Cost (per acre)				
			Subtotal Ripping Costs				
		B.	Topsoil Application with Scraper				
			Volume of Topsoil Removed (cy)				
		_	Moving Materials (0% Grade)				
			Subtotal Topsoil Application Costs				
		C.	Discing and Seeding				
			Discing/Seeding Unit Cost (\$/acre)			-	
			Subtotal Discing/Seeding Costs				
		-					
	nr.		ototal Surface Reclamation Costs per Location atellite Building Area Reclamation Costs				

Well	field a	ınd	Satellite Surface Reclamation	Mine Unit-D	Mine Unit-E	Mine Unit-F	Mine Unit-H
 [.	We	llfie	ld Pattern Area, and Road Reclamation				
			ea (acres)	14.9	44.6	157.6	56.
			ssume wellfield pattern area X 2		-		
		Di	scing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330	\$33
	_		l Pattern Area and Road Reclamation Costs	\$4,924	\$14,725	\$52,001	\$18,52
Tota	Well	fiel	d Area Reclamation Costs				
ī.	We	Ufie	ld Road Reclamation				
		Ro	ad Construction				
			Length of Wellfield Roads (1000 ft)	2.4	13.3	18	15
			Wellfield Road Reclamation Unit Cost (\$/1000 ft)	\$1,311	\$1,311		\$1,31
	Sub	tota	l Wellfield Road Reclamation Costs	\$3,147	\$17,442	\$23,606	\$20,59
[otal	Well	fiel	d Road Reclamation Costs				
II.	Lav	⊥vdov	wn area reclamation				
	~,		Area of Disturbance (acres)	1	1	1	
	-		Average Depth of Stripped Topsoil (ft)	0.67	0.67	0.67	0.6
		1	Surface Grade: Level Ground	3.51			-
			Average Length of Topsoil Haul (ft)	500	500	500	50
		A.					
		1.	Ripping Cost (per acre)	\$1,381	\$1,381	\$1,381	\$1,38
			Subtotal Ripping Costs	\$1,381	\$1,381	\$1,381	\$1,38
		B.	Topsoil Application with Scraper				
			Volume of Topsoil Removed (cy)	1,081	1,081	1,081	1,08
			Moving Materials (0% Grade)	\$1.21	\$1.21		\$1.2
		ļ	Subtotal Topsoil Application Costs	\$1,306	\$1,306	\$1,306	\$1,30
		C.	Discing and Seeding				
			Discing/Seeding Unit Cost (\$/acre)	\$330			
		-	Subtotal Discing/Seeding Costs	\$330			
			btotal Surface Reclamation Costs per WF laydown area	\$3,017	\$3,017	\$3,017	\$3,01
TTTT			/ellfield Laydown Area Reclamation Costs	611 000	P25 104	670 (34	\$42,13
			SURFACE RECLAMATION COSTS PER WELLFIELD  LEFIELD SURFACE RECLAMATION COSTS	\$11,088	\$35,184	\$78,624	\$44,13
V.	Fen		Removal				
			ngth of Fencing (ft)	14,060	18,426		
	-		nce Removal Costs	\$0.42	\$0.42		
P. 4 . 1			I Fence Removal Costs per Wellfield	\$5,877	\$7,702	\$14,793	\$4,04
ota	Fenc	e K	emoval Costs				
٧.	Sate	ellit	e Area Reclamation				
		As	sumptions:				
			Area of Disturbance (acres)				
			Average Depth of Stripped Topsoil (ft)				
		<u> </u>	Surface Grade: Level Ground				
		ļ.,	Average Length of Topsoil Haul (ft)				
	-	A.	Ripping Overburden with Dozer				
	+	-	Ripping Cost (per acre)				
		-	Subtotal Ripping Costs				
	-	В.	Topsoil Application with Scraper Volume of Topsoil Removed (cy)				
		+	Moving Materials (0% Grade)	-			ļ
	- 1	1	Subtotal Topsoil Application Costs				
		1	parototai ropson reputeation costs				
		С	Discing and Seeding			I .	I .
-		C.	Discing/Seeding Unit Cost (\$/acre)				
		C.	Discing/Seeding Unit Cost (\$/acre)				

	lfield and Satellite Surface Reclamation	D-Extension	Mine Unit-I	Mine Unit-J	J-Extensior
 [.	Wellfield Pattern Area, and Road Reclamation				
	Area (acres)	9.3	52.7	52.7	40.0
	*Assume wellfield pattern area X 2				
	Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	4	
	Subtotal Pattern Area and Road Reclamation Costs	\$3,056	\$17,378	\$17,404	\$13,200
otal	Mellfield Area Reclamation Costs				
<u>I.</u>	Wellfield Road Reclamation				
	Road Construction				
	Length of Wellfield Roads (1000 ft)	5			
	Wellfield Road Reclamation Unit Cost (\$/1000 ft)   Subtotal Wellfield Road Reclamation Costs	\$1,311	\$1,311		
	Wellfield Road Reclamation Costs	\$6,557	\$6,557	\$6,557	\$0,33
<u>II.</u> _	Laydown area reclamation				
	Area of Disturbance (acres)	1			
	Average Depth of Stripped Topsoil (ft)  Surface Grade: Level Ground	0.67	0.67	0.67	0.6
	Average Length of Topsoil Haul (ft)	500	500	500	50
	A. Ripping Overburden with Dozer	300	300	300	30
	Ripping Cost (per acre)	\$1,381	\$1,381	\$1,381	\$1,38
	Subtotal Ripping Costs	\$1,381	\$1,381		\$1,38
	B. Topsoil Application with Scraper				
	Volume of Topsoil Removed (cy)	1,081	1,081		
	Moving Materials (0% Grade)	\$1.21	\$1.21		
	Subtotal Topsoil Application Costs	\$1,306	\$1,306	\$1,306	\$1,30
	C. Discing and Seeding	6220	6220	6220	622
	Discing/Seeding Unit Cost (\$/acre) Subtotal Discing/Seeding Costs	\$330 \$330	\$330 \$330		_
	Subtotal Surface Reclamation Costs per WF laydown area	\$3,017	\$3,017		
	Total Wellfield Laydown Area Reclamation Costs	- 45,017	Ψ5,017	ψ5,017	\$5,01
TIP					
OD.	TOTAL SURFACE RECLAMATION COSTS PER WELLFIELD	\$12,630	\$26,952	\$26,978	\$22,77
	TOTAL SURFACE RECLAMATION COSTS PER WELLFIELD FAL WELLFIELD SURFACE RECLAMATION COSTS	\$12,630	\$26,952	\$26,978	\$22,77
TOT.		\$12,630	\$26,952	\$26,978	\$22,77
TOT.	TAL WELLFIELD SURFACE RECLAMATION COSTS	\$12,630	9,977		
TOT.	Fence Removal Length of Fencing (ft) Fence Removal Costs		9,977	10,000	\$0.4
V	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield	0	9,977	10,000	\$0.4
V	Fence Removal Length of Fencing (ft) Fence Removal Costs	0 \$0.42	9,977	10,000	\$0.4
v	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield all Fence Removal Costs	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres)	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft)	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft)	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer Ripping Cost (per acre)	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer Ripping Cost (per acre) Subtotal Ripping Costs	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer Ripping Cost (per acre) Subtotal Ripping Costs B. Topsoil Application with Scraper	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer Ripping Cost (per acre) Subtotal Ripping Costs	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer Ripping Cost (per acre) Subtotal Ripping Costs B. Topsoil Application with Scraper Volume of Topsoil Removed (cy) Moving Materials (0% Grade) Subtotal Topsoil Application Costs	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer Ripping Cost (per acre) Subtotal Ripping Costs B. Topsoil Application with Scraper Volume of Topsoil Removed (cy) Moving Materials (0% Grade) Subtotal Topsoil Application Costs C. Discing and Seeding	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal  Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer Ripping Cost (per acre) Subtotal Ripping Costs B. Topsoil Application with Scraper Volume of Topsoil Removed (cy) Moving Materials (0% Grade) Subtotal Topsoil Application Costs C. Discing and Seeding Discing/Seeding Unit Cost (\$/acre)	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Arca Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer Ripping Cost (per acre) Subtotal Ripping Costs B. Topsoil Application with Scraper Volume of Topsoil Removed (cy) Moving Materials (0% Grade) Subtotal Topsoil Application Costs C. Discing and Seeding Discing/Seeding Unit Cost (\$/acre) Subtotal Discing/Seeding Costs	0 \$0.42	9,977	10,000	\$0.4
V.	Fence Removal  Length of Fencing (ft) Fence Removal Costs Subtotal Fence Removal Costs per Wellfield al Fence Removal Costs  Satellite Area Reclamation Assumptions: Area of Disturbance (acres) Average Depth of Stripped Topsoil (ft) Surface Grade: Level Ground Average Length of Topsoil Haul (ft) A. Ripping Overburden with Dozer Ripping Cost (per acre) Subtotal Ripping Costs B. Topsoil Application with Scraper Volume of Topsoil Removed (cy) Moving Materials (0% Grade) Subtotal Topsoil Application Costs C. Discing and Seeding Discing/Seeding Unit Cost (\$/acre)	0 \$0.42	9,977	10,000	\$0.4

Equipment Removal and Loading	CPP IX Plant	Central Plant	Dryer Building	Satellite SR-1	Pilot ISL	Pumphouse	Bone Yard	Satellite SR-2
I. Removal and Loading Costs			Ü			•		
A. Tankage								
Number of Tanks	23	36	2	21	15	3	3	10
Volume of Tank Construction Material (ft <sup>3</sup> )	900	1340	300	840	260	164	164	397
Tank Removal Cost	\$123.96	\$123.96	\$123.96	\$123.96	\$123.96	\$123.96	\$123.96	\$123.96
Subtotal Tankage Removal and Loading Costs  B. PVC/Steel Pipe	\$111,568	\$166,113	\$37,189	\$104,131	\$32,231	\$20,330	\$20,330	\$49,152
PVC Pipe Footage	4800	6000	350	7000	1500	0	0	4000
Average PVC Pipe Diameter (inches)	3	3	2	3	3	3	0	3
Shredded PVC Pipe Volume Reduction (ft3/ft)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023
Volume of Shredded PVC Pipe (ft <sup>3</sup> )	112	140	8	163	35	0	0	93
Steel Pipe Footage Average Steel Pipe Diameter (inches)	1100 6	1,000	300 0	250 6	0	80 8	0	0
Volume (ft <sup>3</sup> )	216	0	0	49	0	30	0	0
Pipe Removal Cost	\$8.04	\$8.04	\$8.04	\$8.04	\$8.04	\$8.04	\$8.04	\$8.04
Subtotal PVC/Steel Pipe Removal and Loading Costs	\$47,450	\$56,297	\$5,228	\$58,308	\$12,064	\$643	\$0	\$32,170
C. Pumps								
Number of Pumps	23	67	6	23	12	2	0	13
Average Volume (ft <sup>3</sup> /pump) Volume of Pumps (ft <sup>3</sup> )	4.93 113	4.93 330	0	4.93 113	4.93 59	4.93 10	4.93 0	4.93 64
Pump Removal Cost	\$96	\$96	\$96	\$96	\$96	\$96	\$96	\$96
Subtotal Pump Removal and Loading Costs	\$10,847.08			\$10,847.08		\$959.92		\$6,143.48
D. Dryer				,				
Dryer Volume (ft <sup>3</sup> )	0	0	1,000	0	0	0	0	0
Dryer Removal Costs	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13	\$14.13
Subtotal Dryer Dismantling and Loading Cost	\$0	\$0	\$14,130	\$0	\$0	\$0	\$0	\$0
E. RO Units Number of RO Units (500 gpm)								
Current	1	0	0	1	0	0	0	0.25
Planned	0	0	ő	i	ŏ	0	ő	1
Number of Degasser Units								
Current	0	0	0	1	0	0	0	0
Planned	1	0	0	0	0	0	0	1
RO/Degasser Average Volume (ft3/Unit)	250 \$4.69	250 \$4.69	250 \$4.69	250 \$4.69	250 \$4.69	250 \$4.69	250 \$4.69	250 \$4.69
RO and Degasser Removal Cost Subtotal RO Unit Removal and Loading Costs	\$2,343.29	\$0.00	\$0.00	\$3,514.94	\$0.00	\$0.00		\$2,636.20
Subtotal Equipment Removal and Loading Costs per Facility	\$172,209	\$254,087	\$56,547	\$176,800	\$49,958	\$21,934	\$20,330	\$90,101
Total Equipment Removal and Loading Costs	\$1,472,835							
II. Transportation and Disposal Costs (NRC-Licensed Facility)								
A. Tankage								
Volume of Tank Construction Material (ft <sup>3</sup> )	900	1340	300	840	260	164	164	397
Volume for Disposal Assuming Void Space (ft <sup>3</sup> )	990	1474	330	924	286	180	180	436
Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
Subtotal Tankage Transportation and Disposal Costs	\$7,250	\$10,795	\$2,417	\$6,767	<b>\$2,</b> 095	\$1,318	\$1,318	\$3,193
B. PVC / Steel Pipe Volume of Shredded PVC Pipe (ft <sup>3</sup> )	111.8	139.7	8.2	163.0	34.9	0.0	0.0	93.1
Volume for Disposal Assuming Void Space (ft <sup>3</sup> )	123	154	9	179	38	0.0	0.0	102
Volume of Steel Pipe (ft <sup>3</sup> )	216	0	0	49.075	0	30	0	0
Volume for Disposal Assuming Void Space (ft <sup>3</sup> )	238	0	0	54	0	33	0	0
Transportation and Disposal Unit Cost (\$/ft3)	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77	\$5.77
Subtotal PVC Pipe Transportation and Disposal Costs	\$2,083	\$889	\$52	\$1,344	\$219	\$190	\$0	\$589
C. Pumps Volume of Pumps (ft <sup>3</sup> )	113	330	0	113	59	10	0	64
Volume for Disposal Assuming Void Space (ft <sup>3</sup> )	124	363	0	124	65	11	ő	70
Transportation and Disposal Unit Cost (\$/ft3)	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32	\$7.32
Subtotal Pump Transportation and Disposal Costs	\$908	\$2,658	\$0	\$908	\$476	\$81	\$0	\$513
D. Dryer	_				_			
Dryer Volume (ft <sup>3</sup> )	0	0	1000	0	0	0	0	0
Volume for Disposal Assuming Dryer Remains Intact (ft <sup>3</sup> )  Transportation and Disposal Unit Cost (\$/ft3)	0 \$7.32	0 \$7.32	1000 \$7.32	0 \$7.32	0 \$7.32	0 \$7.32	0 \$7.32	0 \$7.32
Total Dryer Transportation and Disposal Costs	\$0	\$0	\$7,323	\$0	\$0	\$0	\$0	\$0
E. RO/Degasser Units			4.,					
Volume of RO Units (ft <sup>3</sup> )	500	0	0	750	0	0	0	562.5
Volume for Disposal Assuming Volume Reduction (ft <sup>3</sup> )	550	0	0	825	0	0	0	618.75
Transportation and Disposal Unit Costs	\$7.32	\$7.32	\$7.32 \$0	\$7.32	\$7.32	\$7.32	\$7.32 \$0	\$7.32 \$4,531
Subtotal RO Unit Transportation and Disposal Costs Subtotal Equipment Transportation and Disposal Costs per Facility	\$4,028 \$14,269	\$0 \$14,342	\$9,792	\$6,042 \$15,061	\$0 \$2,790	\$0 \$1,589	\$1,318	\$8,826
Total Equipment Transportation and Disposal Costs	\$88,560	Ų. 190 IL		<b>4.5,001</b>	+2,170	Ψ1,507	21,510	,
III. Health and Safety Costs	, .							
Radiation Safety costs								
Total Health and Safety Costs Accounted for on GW Rest Sheets								
SUBTOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS PER FACILITY	\$186,478	\$268,429	\$66 330	\$191,861	\$52,748	\$23,523	\$21,648	\$98,928
TOTAL EQUIPMENT REMOVAL AND DISPOSAL COSTS	\$1,561,395	\$300,72 <i>3</i>	-00,000		-52,710	4	<b>421,010</b>	0,, 20

Satellite Reynolds	CPP Lab Addition	CPP Control Room / Change Rooms	CPP Lab	CPP Maintenance Shop Addition	Sodium Hydroxide Addition	T-6D Addition	HUP Plant	Satellite No.	Satellite No.	Satellite No.	Selenium Plant
0	0	0		0	1	0		8	14	18	7
0 \$123.96 \$0	0 \$123.96 \$0	0 \$123.96 \$0	0 \$123.96 \$0	0 \$123.96 \$0	32.5 \$123.96 \$4,029	0 \$123.96 \$0	1629 \$123.96 \$201,939	162 \$123.96 \$20,082	290 \$123.96 \$35,950	397 \$123.96 \$49,214	290 \$123.96 \$35,950
0	001	50	100	0	0	0	12996	1000	4000	4000	4000
3 0.023	0.023	0.023	0.023	0 0.023	0 0.023	0 0.023	3 0.023	0.023	3 0.023	3 0.023	3 0.023
0	2 25	1 50	2 25	0 15	0 25	0	303 645	0	93 0	93 0	93
0 0 \$8.04	0.5 1 \$8.04	0.5 1 \$8.04	0.5 1 \$8.04	0.5 I \$8.04	0.5 1 \$8.04	0 0 \$8.04	2 15 \$8.04	0 0 \$8.04	0 0 \$8.04	0 0 \$8.04	0 0 \$8.04
\$0	\$1,005	\$804	\$1,005	\$121	\$201	\$0	\$109,707	\$8,042	\$32,170	\$32,170	\$32,170
0 4.93	0 4.93	0 4.93	0 4.93	0 4.93	2 4.93	0 4.93	52 4.93	10 4.93	14 4.93	13 4.93	14 4.93
96 \$96	96 \$96	96 \$96	\$96 \$0.00	96 \$96	10 \$96 \$959.92	96 \$96	256.36 \$96 \$24,608.47	49.3 \$96	69.02 \$96	64.09 \$96	69.02 \$96
\$0.00	\$0.00	\$0.00 0	\$0.00	\$0.00 0	\$939.92 0	<b>\$0.00</b>	\$24,008.47 885	\$4,732.40 0	\$6,625.36 0	\$0,152.12	\$6,625.36 0
\$14.13 \$0	\$14.13 \$0	\$14.13 \$0	\$14.13 \$0	\$14.13 \$0	\$14.13 \$0	\$14.13 \$0	\$14.13 \$12,505	\$14.13 \$0	\$14.13 \$0	\$14.13 \$0	\$14.13 \$0
		•									
0	0	0	0	0	0	0	0	0	2.5 0	0	0
0	0	0	0	0	0	0	0	0	0	0	1
0 \$4.69	250 \$4.69	250 \$4.69	250 \$4.69	250 \$4.69	250 <b>\$4.6</b> 9	250 \$4.69	250 \$4.69	250 \$4.69	250 \$4.69	250 \$4.69	250 <b>\$4.69</b>
\$0.00 \$0	\$0.00 \$1,005	\$0.00 \$804	\$0.00 \$1,005	\$0.00 \$121	\$0.00 \$5,190	\$0.00 \$0	\$0.00 \$348,759	\$0.00 \$32,857	\$2,929.12 \$77,674	\$0.00 \$87,536	
0	0	0	0	0	33	0	0	162	290	397	290
0 \$7.32	0 \$7.32	0 \$7.32	0 \$7.32	0 \$7.32	36 \$7.32	0 \$7.32	0 \$7.32	178 \$7.32	319 \$7.32	437 \$7.32	319 \$7.32
\$0	\$0	\$0	\$0	\$0	\$264	\$0	\$0	\$1,304	\$2,336	\$3,200	\$2,336
0.0 0 0	2.3	1.2	2.3	0.0	0.0	0.0	0	23 25	93 102	93 102	93 102
0	1 1	1 1	1 1	1 I	1 1	0	0 0	0	0 0	0	0 0
\$5.77 \$0	\$5.77 \$23	\$5.77 \$12	\$5.77 \$23	\$5.77 \$6	\$5.77 \$6	\$5.77 \$0	\$5.77 \$0	\$5.77 \$144	\$5.77 \$589	\$5.77 \$589	\$5.77 \$589
0	0	0	0	0	10 11	0	0	49 54	69 76	64 70	69 76
\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$81	\$7.32 \$0	\$7.32 \$0	\$7.32 \$395	\$7.32 \$557	\$7.32 \$513	\$7.32 \$557
0	0	0	0	0	0	0	0	0	0	0	0
\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0	\$7.32 \$0
0	0	0	0	0	0	0	0	0	625	0	250
0 \$7.32	0 \$7.32	\$7.32	0 \$7.32	0 \$7.32	0 \$7.32	0 \$7.32	0 \$7.32	0 \$7.32	687.5 \$7.32	0 \$7.32	275 \$7.32
\$0 \$0	\$0 \$23	\$0 \$12	\$0 \$23	\$0 \$6	\$0 \$351	\$0 \$0	\$0 \$0	\$0 \$1,843	\$5,035 \$8,517	\$0 \$4,302	\$2,014 \$5,496
\$0	\$1,028	\$816	\$1,028	\$127	\$5,541	\$0	\$348,759	\$34,700	\$86,191	\$91,838	\$81,412

Building Demolition and Disposal	CPP IX Plant 165 x 70	Central Plant 165 x 100	Dryer Building 100 x 35	Office Building	Storage Building	Water Treat Plant	Shop Building	Pilot ISL Building
Decontamination Costs     A. Wall Decontamination								
Area to be Decontaminated (ft <sup>2</sup> )	9,375	13,150	7,550	0	1,152	576	4,826	12,000
HCl Acid Wash, including labor (\$/ft2).	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88
Subtotal Wall Decontamination Costs	\$8,247	\$11,567	\$6,641	\$0	\$1,013	\$507	\$4,245	\$10,556
B. Concrete Floor Decontamination								
Area to be Decontaminated (ft <sup>2</sup> )	11,550	16,500	3,500	0	1,678	839	7,028	17,477
HCl Acid Wash, including labor (\$/ft2)	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54
Subtotal Concrete Floor Decontamination Costs C. Deep Well Injection Costs	\$6,183	\$8,832	\$1,874	\$0	\$898	\$449	\$3,762	\$9,355
Total kgals for Injection (1 gal used per ft2)	20,925	29,65	11.05	0	2.83	1.415	11.854	29,477
Deep Well Injection Unit Cost (\$/kgals)	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15
Subtotal Deep Well Injection Costs	\$24	\$34	\$13	\$0	\$3	\$2	\$14	\$34
Subtotal Decontamination Costs per Building	\$14,454	\$20,433	\$8,528	\$0	\$1,914	\$958	\$8,021	\$19,945
Total Decontamination Costs	\$276,216							
II. Demolition Costs								
A. Building								
Height of Building (ft)	30	35	35	15	10	10	25	18
Volume of Building (ft <sup>3</sup> )	346,500	577,500	122,500	120,000	16,780	8,390	175,700	314,586
Demolition Cost	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32
Subtotal Building Demolition Costs	\$109,390	\$182,317	\$38,673	\$37,884	\$5,297	\$2,649	\$55,468	\$99,315
B. Concrete Floor								
Area of Concrete Floor (ft²)	10,550	16,500	3,500	8,000	1,678	839	7,028	17,477
Demolition Cost Subtotal Concrete Floor Demolition Costs	\$6.11 \$64,408	\$6.11 \$100,733	\$6.11 \$21,368	\$6.11	\$6,11 \$10,244	\$6.11 \$5,122	\$6.11 \$42,906	\$6.11 \$106,697
C. Concrete Footing	\$04,408	\$100,733	\$21,508	\$48,840	310,244	\$3,122	342,900	\$100,097
Length of Concrete Footing (ft)	411	514	237	358	164	116	335	529
Demolition Cost	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51
Subtotal Concrete Footing Demolition Costs	\$9,247	\$11,564	\$5,326	\$8,052	\$3,688	\$2,608	\$7,547	\$11,901
Subtotal Demolition Costs per Building	\$183,045	\$294,614	\$65,367	\$94,776	\$19,229	\$10,379	\$105,921	\$217,913
Total Demolition Costs	\$3,358,764							
III. Disposal Costs								
A. Building								
Volume of Building (cy)	12,833	21,389	4,537	4,444	621	311	6,507	11,651
Off-site County Facility								
Percentage (%)	100%	100%	100%	100%	100%	100%	100%	100%
Total Volume for Disposal - Incl. 33% Factor (cy) Volume for Disposal (cubic yards)	4235	7058	1497	1467	205	103	2147	3845
Disposal Unit Cost (\$/cy)	\$42,17	\$42,17	\$42.17	\$42.17	\$42.17	\$42,17	\$42.17	\$42.17
Subtotal county facility off-Site Disposal Costs	\$178,576	\$297,626	\$63,133	\$61,844	\$8,648	\$4,324	\$90,551	\$162,128
B. Concrete Floor								
Area of Concrete Floor (ft <sup>2</sup> )	10,550	16,500	3,500	8,000	1,678	839	7,028	17,477
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft <sup>3</sup> )	7912.5	12375	2625	6000	1258.5	629.25	5271	13107.75
Volume of Concrete Floor (cy)	293	458	97	222	47	23	195	485
Off-site County disposal     Percentage (%)	75%	75%	75%	100%	100%	100%	100%	75%
Volume for Disposal (cy)	220	344	73	222	47	23	195	364
Disposal Unit Cost (S/cy)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
Subtotal county facility off-Site Disposal Costs	\$9,268	\$14,495	\$3,075	\$9,370	\$1,965	\$983	\$8,232	\$15,353
2. NRC-Licensed Facility	0.704	0.50/	2521			201		
Percentage (%)	25%	25%	25%	0%	0%	0%	0%	25%
Volume for Disposal (ft³)	20	31	7	0	0	0	0	33
Transportation and Disposal Unit Cost (\$/ft')	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Subtotal NRC-Licensed Facility Disposal Costs Subtotal Concrete Floor Disposal Costs	\$115 \$9,383	\$180 \$14,675	\$38 \$3,113	\$0 \$9,370	\$0 \$1,965	\$0 \$983	\$0 \$8,232	\$190 \$15,543
C. Concrete Footing	دەد,رى	\$14,075	45,115	\$7,510	31,703	φλου	90,232	\$13,343
Length of Concrete Footing (ft)	411	514	237	358	164	116	335	529
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	1	. 1	1	. 1	1	1	1	1
Volume of Concrete Footing (ft <sup>3</sup> )	1643	2055	947	1431	655	463	1341	2115
Volume of Concrete Footing (cy)	61	76	35	53	24	17	50	78
Disposal Unit Cost (\$/cy) Subtotal Concrete Footing Disposal Costs	\$42.17 \$2,567	\$42.17 \$3,210	\$42.17 \$1,478	\$42.17 \$2,235	\$42.17 \$1,024	\$42.17 \$724	\$42.17 \$2,095	\$42.17 \$3,303
Subtotal Disposal Costs per Building	\$190,526	\$315,511	\$67,724	\$73,449	\$11,637	\$6,031	\$100,878	\$180,974
Total Disposal Costs	\$3,105,296				<b></b> *			
IV. Health and Safety Costs								
Accounted for on GW REST SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$388,025	\$630,558	\$141,619	\$168,225	\$32,780	\$17,368	\$214,820	\$418,832
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$6,740,276				•	44-30		,

	Fresh Water Pumphouse	CPP O2 Pad	CPP Fuel Area	Mine Unit 15 O2 Pad	DDW 1 Buildings	DDW SRHUP #10 Buildings	DDW REY-1 Buildings	DDW WellHead Buildings
Building Demolition and Disposal		•			15x30	20x24	20x24	9 ea 8x8
I. Decontamination Costs								
Wall Decontamination     Area to be Decontaminated (ft <sup>2</sup> )	0	0	0	0	720	704	704	0
HCl Acid Wash, including labor (\$/ft2)	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88	\$0.88
Subtotal Wall Decontamination Costs  B. Concrete Floor Decontamination	\$0	\$0	\$0	. \$0	\$633	\$619	\$619	\$0
Area to be Decontaminated (R <sup>2</sup> )	0	0	0	0	450	480	392	0
HCl Acid Wash, including labor (\$/ft2)	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54
Subtotal Concrete Floor Decontamination Costs C. Deep Well Injection Costs	\$0	\$0	\$0	\$0	\$241	\$257	\$210	\$0
Total kgals for Injection (1 gal used per ft2)	0	0	0	0	1.17	1.184	1.096	0
Deep. Well_Injection Unit Cost (\$/kgals) Subtotal Deep Well Injection Costs	\$1.15 \$0	\$1.15 \$0	\$1.15 \$0	\$1.15 \$0	\$1.15 \$1	\$1.15 \$1	\$1.15 \$1	\$1.15 \$0
Subtotal Decontamination Costs per Building	\$0	\$0	\$0	\$0	\$875	\$877	\$830	\$0
Total Decontamination Costs								
II. Demolition Costs								
A. Building	10	0	•	0	0	10	10	10
Height of Building (ft)  Volume of Building (ft <sup>3</sup> )	10 8,320	0	0	0	3,600	10 4,800	10 3,920	10 5,760
Demolition Cost	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32
Subtotal Building Demolition Costs	\$2,627	\$0	\$0	\$0	\$1,137	\$1,515	\$1,238	\$1,818
B. Concrete Floor     Area of Concrete Floor (ft²)	832	400	375	400	450	480	392	448
Demolition Cost	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11
Subtotal Concrete Floor Demolition Costs C. Concrete Footing	\$5,079	\$2,442	\$2,289	\$2,442	\$2,747	\$2,930	\$2,393	\$2,735
Length of Concrete Footing (ft)	115	80	77	80	85	88	79	85
Demolition Cost	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51
Subtotal Concrete Footing Demolition Costs Subtotal Demolition Costs per Building	\$2,597 \$10,303	\$1,800 \$4,242	\$1,743 \$4,032	\$1,800 \$4,242	\$1,910 \$5,794	\$1,972 \$6,417	\$1,782 \$5,413	\$1,905 \$6,458
Total Demolition Costs	<b>410,000</b>	· .,	0.,024	0.12.12	44,,,,	**,	<b>50,</b>	**,**
III. Disposal Costs								
A. Building								
Volume of Building (cy)	308	0	0	0	133	178	145	213
Off-site County Facility Percentage (%)	100%	100%	100%	100%	100%	100%	100%	100%
Total Volume for Disposal - Incl. 33% Factor (cy)	100		-			50	40	<b>50</b>
Volume for Disposal (cubic yards) <u>Disposal Unit Cost (\$/cy)</u>	102 \$42.17	0 \$42.17	·0 \$42.17	0 \$42.17	44 \$42.17	59 \$42.17	48 \$42.17	70 \$42.17
Subtotal county facility off-Site Disposal Costs	\$4,288	\$0	\$0	\$0	\$1,855	\$2,474	\$2,020	\$2,969
B. Concrete Floor     Area of Concrete Floor (R <sup>2</sup> )	832	400	200	400	450	480	392	448
Average Thickness of Concrete Floor (ft)	0.75	0.75	375 0.75	0.75	450 0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft <sup>3</sup> )	624	300	281.25	300	337.5	360	294	336
Volume of Concrete Floor (cy) 1. Off-site County disposal	23	11	10	11	13	13	11	12
Percentage (%)	100%	100%	100%	100%	75%	75%	75%	100%
Volume for Disposal (cy)	23	11	10		9	10	8	12
<u>Disposal Unit Cost (\$/cy)</u> Subtotal county facility off-Site Disposal Costs	\$42.17 \$975	\$42.17 \$469	\$42.17 \$439	\$42.17 \$469	\$42.17 \$395	\$42.17 \$422	\$42.17 \$344	\$42.17 \$525
2. NRC-Licensed Facility								
Percentage (%)  Volume for Disposal (ft <sup>3</sup> )	0%	0% 0	0%	0%	25%	25%	25%	0%
Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )	0 \$5.80	\$5.80	0 \$5.80		\$5.80	1 \$5.80	1 \$5.80	0 \$5.80
Subtotal NRC-Licensed Facility Disposal Costs	\$0	\$0	\$0		\$5	\$5	\$4	\$0
Subtotal Concrete Floor Disposal Costs C. Concrete Footing	\$975	\$469	\$439	\$469	\$400	\$427	\$348	\$525
Length of Concrete Footing (ft)	115	80	77	80	85	88	79	85
Average Depth of Concrete Footing (ft)	4	4	4		4	4	4	4
Average Width of Concrete Footing (ft)  Volume of Concrete Footing (ft <sup>3</sup> )	1 462	1 320	1 310		339	1 351	l 317	1 339
Volume of Concrete Footing (cy)	17	12	11		13	13	12	13
Disposal Unit Cost (\$/cy) Subtate! Congrete Feeting Disposal Costs	\$42.17 \$72.1	\$42.17 \$500	\$42.17 \$484		\$42.17 \$530	\$42.17 \$547	\$42.17 \$495	\$42.17 \$520
Subtotal Concrete Footing Disposal Costs Subtotal Disposal Costs per Building	\$721 \$5,984	\$500 \$969	\$484 \$923		\$530 \$2,785	\$547 \$3,448	\$495 \$2,863	\$529 \$4,023
Total Disposal Costs	,			-				•
IV. Health and Safety Costs								
Accounted for on GW REST								
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$16,287	\$5,211	\$4,955	\$5,211	\$9,454	\$10,742	\$9,106	\$10,481

Building Demolition and Disposal	Satellite SR-I 160X120	Yellowcake Warehouse 63 x 63	Satellite SR-2 160X120	Satellite Reynolds 160X120	Construction Shop 50X80	CPP Lab Addition 25X40	DDW SRHUP #7 Bulldings 20x24	DDW SRHUP #8 Buildings 20x24
I. Decontamination Costs								
A. Wall Decontamination				•	•	1.000	704	0
Area to be Decontaminated (ft')  HCl Acid Wash, including labor (\$/ft2)	0 \$0.88	4,662 \$0.88	0 \$0.88	0 \$0.88	0 \$0.88	1,000 \$0.88	\$0.88	\$0.88
Subtotal Wall Decontamination Costs	\$0	\$4,101	\$0	\$0		\$880	\$619	\$0
B. Concrete Floor Decontamination								
Area to be Decontaminated (ft²)	19200	3969	19200	0	0	0	480	0
HCl Acid Wash, including labor (S/ft2). Subtotal Concrete Floor Decontamination Costs	\$0.54 \$10,278	\$0.54 \$2,125	\$0.54 \$10,278	\$0.54 \$0	\$0.54 \$0	\$0.54 \$0	\$0.54 \$257	\$0.54 \$0
C. Deep Well Injection Costs	\$10,276	\$2,125	\$10,270	40	30	30	<b>3231</b>	•
Total kgals for Injection (1 gal used per ft2)	19.2	8.631	19.2	0	0	1	I.184	0
Deep Well Injection Unit Cost (\$/kgals)	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15
Subtotal Deep Well Injection Costs Subtotal Decontamination Costs per Building	\$22 \$10,300	\$10 \$6,236	\$22 \$10,300	\$0 \$0	\$0 \$0	\$1 \$881	\$1 \$877	\$0 \$0
Total Decontamination Costs	<b>\$10,500</b>	20,200	<b>410,000</b>	•	•	4001	•	•
II. Demolition Costs								
A. Building								
Height of Building (ft)	24	20	24	0	20	10	10	0
Volume of Building (ft <sup>3</sup> )	460,800	79,380	460,800	0	80,000	10,000	4,800	0
<u>Demolition Cost</u> Subtotal Building Demolition Costs	\$0.32 \$145,475	\$0.32	\$0.32 \$145,475	\$0.32 \$0	\$0.32	\$0.32	\$0.32	\$0.32 \$0
B. Concrete Floor	\$143,473	\$25,060	\$143,473	30	\$25,256	\$3,157	\$1,515	30
Area of Concrete Floor (ft <sup>2</sup> )	19,200	3,969	19,200	0	4,000	0	480	0
Demolition Cost	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11
Subtotal Concrete Floor Demolition Costs	\$117,216	\$24,231	\$117,216	\$0	\$24,420	\$0	\$2,930	\$0
C. Concrete Footing  Length of Concrete Footing (ft)	554	252	554	0	. 253	0	88	0
Demolition Cost	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51
Subtotal Concrete Footing Demolition Costs	\$12,474	\$5,672	\$12,474	\$0		\$0	\$1,972	\$0
Subtotal Demolition Costs per Building	\$275,165	\$54,963	\$275,165	\$0	\$55,370	\$3,157	\$6,417	\$0
Total Demolition Costs								
III. Disposal Costs								
A. Building								
Volume of Building (cy)	17,067	2,940	17,067	0	2,963	370	178	0
Off-site County Facility Percentage (%)	100%	100%	100%	100%	100%	100%	100%	100%
Total Volume for Disposal - Incl. 33% Factor (cy)					10070	100.0		
Volume for Disposal (cubic yards)	5632	970	5632	0	978	122	59	0
<u>Disposal Unit Cost (\$/cy)</u> Subtotal county facility off-Site Disposal Costs	\$42.17 \$237,483	\$42,17 \$40,910	\$42.17 \$237,483	\$42.17 \$0		\$42.17 \$5,154	\$42.17 \$2,474	\$42.17 \$0
B. Concrete Floor	\$231,463	\$40,910	3231,403	20	\$41,230	\$3,134	32,414	20
Area of Concrete Floor (ft <sup>2</sup> )	19,200	3,969	19,200	0	4,000	0	480	0
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75		0.75	0.75	0.75
Volume of Concrete Floor (ft <sup>3</sup> )	14400	2976.75	14400	0		0	360	0
Volume of Concrete Floor (cy)	533	110	533	0	111	0	13	0
Off-site County disposal     Percentage (%)	75%	75%	75%	75%	100%	90%	75%	75%
Volume for Disposal (cy)	400	83	400	0		0	10	0
Disposal Unit Cost (\$/cy)	\$42.17	\$42.17	\$42.17	\$42.17		\$42.17	\$42.17	\$42.17
Subtotal county facility off-Site Disposal Costs 2. NRC-Licensed Facility	\$16,867	\$3,487	\$16,867	\$0	\$4,685	\$0	\$422	\$0
Percentage (%)	25%	25%	25%	25%	0%	10%	25%	25%
Volume for Disposal (ft <sup>3</sup> )	36	7	36	0		0	1	0
Transportation and Disposal Unit Cost (\$/ft³)	\$5.80	\$5.80	\$5.80	\$5.80		\$5.80	\$5.80	\$5.80
Subtotal NRC-Licensed Facility Disposal Costs	\$209	\$43	\$209	\$0		\$0	. \$5	\$0
Subtotal Concrete Floor Disposal Costs	\$17,076	\$3,530	\$17,076	\$0	\$4,685	\$0	\$427	\$0
C. Concrete Footing  Length of Concrete Footing (ft)	554	252	554	0	253	0	88	0
Average Depth of Concrete Footing (ft)	4	4	4	4		0	4	4
Average Width of Concrete Footing (ft)	1	1	1	1	1	0	1	1
Volume of Concrete Footing (ft <sup>3</sup> )	2217	1008	2217	0		0	351	0
Volume of Concrete Footing (cy)	82 \$42.17	37 \$42.17	82 \$42.17	0 \$42.17		0 \$42.17	13	0 \$42.17
<u>Disposal Unit Cost (\$/cy)</u> Subtotal Concrete Footing Disposal Costs	\$42.17 \$3,462	\$42.17 \$1,574	\$42.17 \$3,462	\$42.17 \$0		\$42.17 \$0	\$42.17 \$547	\$42.17 \$0
Subtotal Costs per Building	\$258,021	\$46,014	\$258,021	\$0		\$5,154	\$3,448	\$0
Total Disposal Costs								
IV. Health and Safety Costs								
Accounted for on GW REST								
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$543,486	\$107,213	\$543,486	\$0	\$102,865	\$9,192	\$10,742	\$0
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS								

D. Haller D. C. Haller and A. Discond	CPP Control Room / Change Rooms	CPP Lab	CPP Maintenance Shop Addition	Sodium Hydroxide Addition	T-6D Addition	HUP Plant	Dryer Building
Building Demolition and Disposal	32 x 32	32 x 32	25X40	20 x 20	22 x 20		
I. Decontamination Costs A. Wall Decontamination							
Area to be Decontaminated (ft <sup>2</sup> )	0	1,024	0	0	1,540	131,000	20,000
HCl Acid Wash, including labor (\$/ft2) Subtotal Wall Decontamination Costs	\$0.88 \$0	\$0.88 \$901	\$0.88 \$0	\$0.88 \$0	\$0.88 \$1,355	\$0.88 \$115,233	\$0.88 \$17,593
B. Concrete Floor Decontamination	•	3,01	•	30	31,550	4110,000	011,535
Area to be Decontaminated (ft²)	1024	0	1000	800	440	17820	0
HCl Acid Wash, including labor (\$/ft2) Subtotal Concrete Floor Decontamination Costs	\$0.54 \$548	\$0.54 \$0	\$0.54 \$535	\$0.54 \$428	\$0.54 \$236	\$0.54 <b>\$9,</b> 539	\$0.54 \$0
C. Deep Well Injection Costs							
Total kgals for Injection (1 gal used per ft2)  Deep Well Injection Unit Cost (\$/kgals)	1.024 \$1.15	1.024 \$1.15	1 \$1.15	0.8 \$1.15	1.98 \$1,15	148.82 \$1.15	20 \$1.15
Subtotal Deep Well Injection Costs	\$1	\$1	1\$	\$1	\$2	\$171	\$23
Subtotal Decontamination Costs per Building Total Decontamination Costs	\$549	\$902	\$536	\$429	\$1,593	\$124,943	\$17,616
II. Demolition Costs A. Building							
Height of Building (ft)	10	10	10	20	24	24	24
Volume of Building (ft <sup>3</sup> )	10,240	10,240	10,000	16,000	10,560	794,000	30,720
Demolition Cost Subtotal Building Demolition Costs	\$0.32 \$3,233	\$0.32 \$3,233	\$0.32 \$3,157	\$0.32 \$5,051	\$0.32 \$3,334	\$0.32 \$250,666	\$0.32 \$9,698
B. Concrete Floor			,	40,001	33,55	<b>4</b> ,	*****
Area of Concrete Floor (ft <sup>2</sup> )	1,000	0	1,000	800	440	23,760	500
Demolition Cost Subtotal Concrete Floor Demolition Costs	\$6.11 \$6,105	\$6.11 \$0	\$6.11 \$6,105	\$6.11 \$4,884	\$6.11 \$2,686	\$6.11 \$145,055	\$6.11 \$3,053
C. Concrete Footing							
Length of Concrete Footing (ft)  Demolition Cost	0 \$22.51	0 \$22.51	63 \$22.51	57 \$22.51	63 \$22.51	617 \$22.51	89 \$22.51
Subtotal Concrete Footing Demolition Costs	\$0	\$0	\$1,423	\$1,273	\$1,416	\$13,877	\$2,013
Subtotal Demolition Costs per Building Total Demolition Costs	\$9,338	\$3,233	\$10,685	\$11,208	\$7,436	\$409,598	\$14,764
III. Disposal Costs A. Building							
Volume of Building (cy)	379	379	370	593	391	29,407	1,138
Off-site County Facility Percentage (%)	100%	100%	100%	100%	100%	100%	100%
Total Volume for Disposal - Incl. 33% Factor (cy)	100%	10076	10078	10078	10078	10076	10078
Volume for Disposal (cubic yards)	125 \$42,17	125 \$42,17	122 \$42,17	196 \$42.17	129 \$42,17	9704 \$42.17	375 \$42,17
<u>Disposal Unit Cost (\$/cy)</u> Subtotal county facility off-Site Disposal Costs	\$5,277	\$5,277	\$5,154	\$8,246	\$5,442	\$409,204	\$15,832
B. Concrete Floor							
Area of Concrete Floor (ft')  Average Thickness of Concrete Floor (ft)	1,000 1.75	0 0.5	1,000 0.5	800 0.75	440 0.75	23,760 0.75	500 0.75
Volume of Concrete Floor (ft <sup>2</sup> )	1750	0.5		600	330	17820	375
Volume of Concrete Floor (cy)	65	0	19	22	12	660	14
Off-site County disposal     Percentage (%)	90%	75%	90%	75%	75%	75%	75%
Volume for Disposal (cy)	58	0	17	17	9	495	10
<u>Disposal Unit Cost (\$/cy)</u> Subtotal county facility off-Site Disposal Costs	\$42.17 \$2,460	\$42.17 \$0	\$42.17 \$703	\$42.17 \$703	\$42.17 \$387	\$42.17 \$20,873	\$42.17 \$439
2. NRC-Licensed Facility	-					•	
Percentage (%)	10%	25%	10%	25%	25%	25%	25%
Volume for Disposal (ft <sup>3</sup> )  Transportation and Disposal Unit Cost (\$/ft <sup>3</sup> )	\$5.80	0 \$5.80		2 \$5.80	1 \$5.80	45 \$5.80	1 \$5.80
Subtotal NRC-Licensed Facility Disposal Costs	\$10	\$0.80		\$5.80	\$5.80	\$259	\$5.00
Subtotal Concrete Floor Disposal Costs C. Concrete Footing	\$2,470	\$0	\$706	\$712	\$392	\$21,132	\$444
Length of Concrete Footing (ft)	0	0	63	113	63	617	89
Average Depth of Concrete Footing (ft)	4	0		5.75	4	4	4
Average Width of Concrete Footing (ft)  Volume of Concrete Footing (ft <sup>2</sup> )	0	0		0.75 488	t 252	1 2466	1 358
Volume of Concrete Footing (cy)	0	0	9	18	9	91	13
<u>Disposal Unit Cost (\$/cy)</u> Subtotal Concrete Footing Disposal Costs	\$42.17 \$0	\$42.17 \$0	\$42.17 \$395	\$42.17 \$762	\$42.17 \$393	\$42.17 \$3,852	\$42.17 \$559
Subtotal Disposal Costs per Building	\$7,747	\$5,277	\$6,255	\$9,720	\$6,227	\$434,188	\$16,835
Total Disposal Costs							
IV. Health and Safety Costs							
Accounted for on GW REST SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$17,634	\$9,412	\$17,476	\$21,357	\$15,256	\$968,729	\$49,215
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	φ17,03 <del>9</del>	φ <b>7,</b> τ1Δ	φ11, <del>1</del> 10	ا حدود مدب	0لىمرىدب	\$700,123	واعبرت

Building Demolition and Disposal	Satellite No. 1	Satellite No. 2	Satellite No. 3	Sat. No. 3 Fab Shop	Yellowcake Warehouse	South Warehouse
I. Decontamination Costs						
A. Wall Decontamination	_	_	_	_		_
Area to be Decontaminated ( $\Re^2$ )  HCl Acid Wash, including labor (\$/\R2)	0 \$0.88	0 \$0.88	0 \$0.88	0 \$0.88	0 \$0.88	0 \$0.88
Subtotal Wall Decontamination Costs	\$0.88	\$0.68 \$0	\$0.88 \$0	\$0.88	\$0.88	\$0.88 \$0
B. Concrete Floor Decontamination	••	••	•	•	••	•
Area to be Decontaminated (ft <sup>2</sup> )	6000	9600	9600	0	0	0
HCl Acid Wash, including labor (\$/ft2)	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54
Subtotal Concrete Floor Decontamination Costs	\$3,212	\$5,139	\$5,139	\$0	\$0	\$0
C. Deep Well Injection Costs  Total kgals for Injection (1 gal used per ft2)	,	0.6	0.6	•		•
Deep Well Injection Unit Cost (\$\script{kgals}\)	6 \$1.15	9.6 \$1.15	9.6 \$1.15	0 \$1.15	0 \$1.15	0 \$1.15
Subtotal Deep Well Injection Costs	\$7	\$11	\$11	\$0	\$0	\$0
Subtotal Decontamination Costs per Building	\$3,219	\$5,150	\$5,150	\$0	\$0	\$0
Total Decontamination Costs						
II. Demolition Costs						
A. Building						
Height of Building (ft)	24	25	25	25	14	19
Volume of Building (ft <sup>3</sup> )	192,000	320,000	320,000	37,560	91,000	333,000
Demolition Cost	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32
Subtotal Building Demolition Costs	\$60,614	\$101,024	\$101,024	\$11,858	\$28,729	\$105,128
B. Concrete Floor						
Area of Concrete Floor (ft <sup>2</sup> )	8,000	12,800	12,800	0	6,500	18,000
Demolition Cost	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11
Subtotal Concrete Floor Demolition Costs C. Concrete Footing	\$48,840	\$78,144	\$78,144	\$0	\$39,683	\$109,890
Length of Concrete Footing (ft)	358	453	453	0	322	537
Demolition Cost	\$22.51	\$22.51	\$22.51	\$22.51	\$22,51	\$22.51
Subtotal Concrete Footing Demolition Costs	\$8,052	\$10,185	\$10,185	\$0	\$7,258	\$12,078
Subtotal Demolition Costs per Building	\$117,506	\$189,353	\$189,353	\$11,858	\$75,670	\$227,096
Total Demolition Costs						
III. Disposal Costs						
A. Building						
Volume of Building (cy)	7,111	11,852	11,852	1,391	3,370	12,333
Off-site County Facility						
Percentage (%)	100%	100%	100%	100%	100%	100%
Total Volume for Disposal - Incl. 33% Factor (cy) Volume for Disposal (cubic yards)	2347	3911	3911	459	1112	4070
Disposal Unit Cost (\$/cv)	\$42.17	\$42.17	\$42.17	\$42.17	\$42,17	\$42.17
Subtotal county facility off-Site Disposal Costs	\$98,951	\$164,919	\$164,919	\$19,357	\$46,899	\$171,618
B. Concrete Floor						
Area of Concrete Floor (ft <sup>2</sup> )	8,000	12,800	12,800	0	6,500	18,000
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft <sup>3</sup> )	6000	9600	9600	0	4875	13500
Volume of Concrete Floor (cy) 1. Off-site County disposal	222	356	356	0	181	500
Percentage (%)	75%	100%	100%	100%	100%	100%
Volume for Disposal (cy)	167	356	356	0	181	500
Disposal Unit Cost (\$/cv)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
Subtotal county facility off-Site Disposal Costs	\$7,028	\$14,993	\$14,993	\$0	\$7,613	\$21,083
2. NRC-Licensed Facility						
Percentage (%)	25%	0%	0%	0%	0%	0%
Volume for Disposal (ft³)	15	0	0	0	0	0
Transportation and Disposal Unit Cost (\$\frac{1}{R}^3\$)  Subtotal NRC-Licensed Facility Disposal Costs	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80	\$5.80
Subtotal Concrete Floor Disposal Costs  Subtotal Concrete Floor Disposal Costs	\$87 \$7,115	\$0 \$14,993	\$0 \$14,993	\$0 \$0	\$0 \$7,613	\$0 \$21,083
C. Concrete Footing	37,113	314,555	\$14,555	30	37,013	\$21,003
Length of Concrete Footing (ft)	358	453	453	0	322	537
Average Depth of Concrete Footing (ft)	4	4	4	4	4	4
Average Width of Concrete Footing (ft)	I	I	1	1	1	1
Volume of Concrete Footing (ft')	1431	1810	1810	0	1290	2147
Volume of Concrete Footing (cy)	53 \$42.17	67	67	0 543 17	48	80 542.17
<u>Disposal Unit Cost (\$/cv)</u> Subtotal Concrete Footing Disposal Costs	\$42.17 \$2,235	\$42.17 \$2,827	\$42.17 \$2,827	\$42.17 \$0	\$42.17 \$2,015	\$42.17 \$3,352
Subtotal Disposal Costs per Building	\$108,301	\$2,827 \$182,739	\$182,739	\$19,357	\$56,527	\$3,332 \$196,053
Total Disposal Costs	***************************************	J. (2, 1, 1, 2)	<b>4.02,73</b>	U.2,557	400,021	4.70,000
IV. Health and Safety Costs						
Accounted for on GW REST SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$229,026	\$377,242	\$377,242	\$31,215	\$132,197	\$423,149
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	<b>4217,020</b>	₩. 1 C. W. T. L. W. T. W. T. L. W. T. W. T. L. W. T. W. W. T. W. W. T. W. W. T. W. W. T. W. W. T. W. T. W. W. T. W. W. T. W. T. W. T. W. T. W. W. T.	4511,642	للمهدو	W132,17/	₩ <i>(Ш)</i> ,£77

Building Demolition and Disposal	Suspended Walkway	Changehouse and Lab	Maintenance Building	mian Office	Process/Fire Water	Potable Water Building
		,				
I. Decontamination Costs A. Wall Decontamination						
Area to be Decontaminated (ft <sup>2</sup> )	0	0	0	0	0	0
HCl Acid Wash, including labor (\$/ft2) Subtotal Wall Decontamination Costs	\$0.88 \$0	\$0.88 \$0	\$0.88 \$0	\$0.88 \$0	\$0.88 \$0	\$0.88 \$0
B. Concrete Floor Decontamination	30	30	30	90	30	40
Area to be Decontaminated (ft <sup>2</sup> )	0	0	0	0	0	0
HCl Acid Wash, including labor (\$/ft2)	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54 \$0
Subtotal Concrete Floor Decontamination Costs C. Deep Well Injection Costs	\$0	\$0	\$0	\$0	\$0	20
Total kgals for Injection (1 gal used per ft2)	0	0	0	0	0	0
Deep Well Injection Unit Cost (\$/kgals)	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15
Subtotal Deep Well Injection Costs Subtotal Decontamination Costs per Building	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0
Total Decontamination Costs	•	•	•	•	•	•
II. Demolition Costs						
A. Building						
Height of Building (ft)	0	14	13	12		35
Volume of Building (ft <sup>3</sup> )	5,600	73,000	27,000	72,000	16,500	6,300
<u>Demolition Cost</u> Subtotal Building Demolition Costs	\$0.32 \$1,768	\$0.32 \$23,046	\$0.32 \$8,524	\$0.32 \$22,730	\$0.32 \$5,209	\$0.32 \$1,989
B. Concrete Floor	<b>\$1,700</b>	\$25,040	30,324	322,730	33,207	31,707
Area of Concrete Floor (ft <sup>2</sup> )	0	5,400	2,100	6,000	800	180
Demolition Cost	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11
Subtotal Concrete Floor Demolition Costs	\$0	\$32,967	\$12,821	\$36,630	\$4,884	\$1,099
C. Concrete Footing  Length of Concrete Footing (ft)	0	294	183	310	113	54
Demolition Cost	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51	\$22.51
Subtotal Concrete Footing Demolition Costs	\$0	\$6,615	\$4,125	\$6,973	\$2,546	\$1,208
Subtotal Demolition Costs per Building Total Demolition Costs	\$1,768	\$62,628	\$0	\$0	\$12,639	\$4,296
Total Demontion Costs						
III. Disposal Costs						
A. Building Volume of Building (cy)	207	2,704	1,000	2,667	611	233
Off-site County Facility	207	2,704	1,000	2,007	011	233
Percentage (%)	100%	100%	100%	100%	100%	. 100%
Total Volume for Disposal - Incl. 33% Factor (cy)		202	220	200		
Volume for Disposal (cubic yards) <u>Disposal Unit Cost (\$/cy)</u>	68 \$42.17	892 \$42.17	330 \$42.17	880 \$42.17	202 \$42.17	77 \$42.17
Subtotal county facility off-Site Disposal Costs	\$2,886	\$37,622	\$13,915	\$37,107	\$8,504	\$3,247
B. Concrete Floor						
Area of Concrete Floor (ft²)	0	5,400	2,100	6,000		180
Average Thickness of Concrete Floor (ft)	0.75	0.75	0.75	0.75		0.75
Volume of Concrete Floor (ft <sup>5</sup> ) Volume of Concrete Floor (cy)	0	4050 150	1575 58	4500 167	600 22	135 5
1. Off-site County disposal	·	100	-			•
Percentage (%)	100%	100%	100%	100%		100%
Volume for Disposal (cy)	0 \$42.17	150 \$42.17	58 \$42.17	167 \$42.17	22 \$42,17	5 \$42.17
<u>Disposal Unit Cost (\$/cy)</u> Subtotal county facility off-Site Disposal Costs	\$42.17	\$6,325	\$2,460	\$42.17 \$7,028	\$937	\$211
2. NRC-Licensed Facility						
Percentage (%)	0%	0%	0%	0%	0%	0%
Volume for Disposal (ft <sup>3</sup> )	0	0	0	0		0
Transportation and Disposal Unit Cost (\$/ft') Subtotal NRC-Licensed Facility Disposal Costs	\$5.80	\$5.80	\$5.80	\$5.80		\$5.80
Subtotal Concrete Floor Disposal Costs	\$0 \$0	\$0 \$6,325	\$0 \$2,460	\$0 \$7,028		\$0 \$211
C. Concrete Footing			J., 100	21,020	•	
Length of Concrete Footing (ft)	0	294	183	310		54
Average Depth of Concrete Footing (ft)  Average Width of Concrete Footing (ft)	4	4 I	4	4	4 . 1	4
Volume of Concrete Footing (ft <sup>3</sup> )	0	1176	733	1239	•	215
Volume of Concrete Footing (cy)	0	44	27	46		8
Disposal Unit Cost (\$/cy)	\$42.17	\$42.17	\$42.17	\$42.17		\$42.17
Subtotal Concrete Footing Disposal Costs	\$0	\$1,836	\$1,145	\$1,936		\$335 \$2.703
Subtotal Disposal Costs per Building Total Disposal Costs	\$2,886	\$45,783	\$0	\$0	\$10,148	\$3,793
•						
IV. Health and Safety Costs  Accounted for on GW REST						
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$4,654	\$108,411	\$0	\$0	\$22,787	\$8,089
TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS						

Building Demolition and Disposal	Potable Water Tank Slab	Central Plant Tank Slabs	Selenium Plant	Exxon R&D RO Building	Exxon R&D Process Building	SRHUP #9 DDW	Vollman 33-27 DDW
I. Decontamination Costs							
A. Wall Decontamination							
Area to be Decontaminated ( $\Re^2$ )  HCl Acid Wash, including labor (\$/\R2).	0 \$0.88	0 \$0.88	4,000 \$0.88	0 \$0.88	\$0.88	0 \$0.88	0 \$0.88
Subtotal Wall Decontamination Costs	\$0	\$0	\$3,519	\$0	\$0	\$0	\$0
B. Concrete Floor Decontamination     Area to be Decontaminated (R <sup>2</sup> )	0	0	9600	1260	1260	1260	1260
HCl Acid Wash, including labor (\$/ft2)	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54	\$0.54
Subtotal Concrete Floor Decontamination Costs C. Deep Well Injection Costs	\$0	\$0	\$5,139	\$674	\$674	\$674	\$674
Total kgals for Injection (1 gal used per ft2)	0	0	13.6	1.26	1.26	1.26	1.26
<u>Deep Well Injection Unit Cost (\$/kgals)</u> Subtotal Deep Well Injection Costs	\$1.15 \$0	\$1.15 \$0	\$1.15 \$16	\$1.15 \$1	\$1.15 \$1	\$1.15 \$1	\$1.15 \$1
Subtotal Deep Well Injection Costs Subtotal Decontamination Costs per Building	\$0	\$0	\$8,674	Ģī.	ĝ.	\$675	\$675
Total Decontamination Costs							
II. Demolition Costs							
A. Building Height of Building (ft)	0	0	25	12	12	12	. 12
Volume of Building (ft <sup>3</sup> )	0	0	320,000	15,120	15,120	15,120	15,120
Demolition Cost	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32
Subtotal Building Demolition Costs  B. Concrete Floor	\$0	\$0	\$101,024	<b>\$4,77</b> 3	<b>\$4,77</b> 3	\$4,773	\$4,773
Area of Concrete Floor (ft <sup>2</sup> )	1,256	7,854	12,800	12,801	12,802	1,260	1,260
Demolition Cost	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11	\$6.11
Subtotal Concrete Floor Demolition Costs C. Concrete Footing	\$7,668	\$47,949	\$78,144	\$78,150	\$78,156	\$7,692	\$7,692
Length of Concrete Footing (ft)	0	0	453	453	453	142	142
<u>Demolition Cost</u> Subtotal Concrete Footing Demolition Costs	\$22.51 \$0	\$22.51 \$0	\$22.51 \$10,185	\$22.51 \$10,185	\$22.51 \$10,186	\$22.51 \$3,196	\$22.51 \$3,196
Subtotal Demolition Costs per Building	\$7,668	\$47,949	\$189,353	\$0	\$0	\$15,661	\$15,661
Total Demolition Costs							
III. Disposal Costs							
A. Building Volume of Building (cy)	0	0	11,852	560	560	560	560
Off-site County Facility	v	· ·	11,002	500	300	500	200
Percentage (%)	100%	100%	100%	100%	100%	100%	100%
Total Volume for Disposal - Incl. 33% Factor (cy) Volume for Disposal (cubic yards)	0	0	3911	185	185	185	185
Disposal Unit Cost (\$/cy)	\$42.17		\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
Subtotal county facility off-Site Disposal Costs  B. Concrete Floor	\$0	\$0	\$164,919	\$7,792	\$7,792	\$7,792	\$7,792
Area of Concrete Floor (ft <sup>2</sup> )	1,256		12,800	12,801	12,802	1,260	1,260
Average Thickness of Concrete Floor (ft)	0.75		0.75	0.75	0.75	0.75	0.75
Volume of Concrete Floor (ft <sup>3</sup> ) Volume of Concrete Floor (cy)	942 35		9600 356	9600.75 356	9601.5 356	945 35	945 35
Off-site County disposal			4.004				1,1001
Percentage (%)  Volume for Disposal (cy)	100%		100% 356	100% 356	100% <b>356</b>	100% 35	100%
Disposal Unit Cost (\$/cy)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17
Subtotal county facility off-Site Disposal Costs  2. NRC-Licensed Facility	\$1,471	\$9,199	\$14,993	\$14,994	\$14,995	\$1,476	\$1,476
Percentage (%)	0%	0%	0%	0%	0%	0%	0%
Volume for Disposal (ft <sup>3</sup> )	0		0	0		0	0
Transportation and Disposal Unit Cost (\$/ft') Subtotal NRC-Licensed Facility Disposal Costs	\$5.80 \$0		\$5.80 \$0	\$5.80 \$0	\$5.80 \$0	\$5.80 \$0	\$5.80 \$0
Subtotal Concrete Floor Disposal Costs	\$1,471		\$14,993	\$14,994	\$14,995	\$1,476	\$1,476
C. Concrete Footing  Length of Concrete Footing (ft)	o	0	453	453	453	. 142	142
Average Depth of Concrete Footing (ft)	4		4	4		4	4
Average Width of Concrete Footing (ft)	l		1	1	1	1	[
Volume of Concrete Footing (R <sup>3</sup> )  Volume of Concrete Footing (cy)	0		1810 67	1810 67	1810 67	568 21	568 21
Disposal Unit Cost (\$/cy)	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42.17	\$42,17
Subtotal Concrete Footing Disposal Costs Subtotal Disposal Costs per Building	\$0 \$1,471		\$2,827 \$182,739	\$2,827 \$0		\$887 \$10,155	\$887 \$10,155
Total Disposal Costs	J1,771	Ψ/,133	ψ.(Ja <sub>1</sub> 137	30	<b>3</b> 0	ψ.0,100	210,100
IV. Health and Safety Costs							
Accounted for on GW REST		_			_		**
SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS	\$9,139	\$57,148	\$380,766	\$0	\$0	\$26,491	\$26,491

#### 1-20 DDW **Building Demolition and Disposal** Decontamination Costs A. Wall Decontamination Area to be Decontaminated (ft2) HCl Acid Wash, including labor (\$/ft2) \$0.88 Subtotal Wall Decontamination Costs \$0 B. Concrete Floor Decontamination Area to be Decontaminated (ft2) 1260 HCl Acid Wash, including labor (\$/ft2) 0.535979164 Subtotal Concrete Floor Decontamination Costs 675 C. Deep Well Injection Costs Total kgals for injection (1 gal used per ft2) Deep Well Injection Unit Cost (\$/kgals) 1.127414695 Subtotal Deep Well Injection Costs Subtotal Decontamination Costs per Building 676 **Total Decontamination Costs** II. Demolition Costs A. Building Height of Building (ft) 12 Volume of Building (ft3) 15,120 Demolition Cost \$0.32 Subtotal Building Demolition Costs \$4,773 B. Concrete Floor Area of Concrete Floor (ft2) 1,260 Demolition Cost \$6.11 Subtotal Concrete Floor Demolition Costs \$7,692 C. Concrete Footing Length of Concrete Footing (ft) 142 Demolition Cost \$22.51 Subtotal Concrete Footing Demolition Costs \$3,196 Subtotal Demolition Costs per Building **Total Demolition Costs** III. Disposal Costs A. Building Volume of Building (cy) 560 Off-site County Facility Percentage (%) 100% Total Volume for Disposal - Incl. 33% Factor (cy) Volume for Disposal (cubic yards) 185 Disposal Unit Cost (\$/cy) \$42.17 Subtotal county facility off-Site Disposal Costs \$7,792 B. Concrete Floor Area of Concrete Floor (ft2) 1,260 Average Thickness of Concrete Floor (ft) 0.75 Volume of Concrete Floor (ft3) 945 Volume of Concrete Floor (cy) 35 1. Off-site County disposal Percentage (%) 100% Volume for Disposal (cy) 35 Disposal Unit Cost (\$/cv) \$42.17 Subtotal county facility off-Site Disposal Costs \$1,476 2. NRC-Licensed Facility 0% Percentage (%) Volume for Disposal (ft3) n Transportation and Disposal Unit Cost (\$/ft3) \$5.80 Subtotal NRC-Licensed Facility Disposal Costs Subtotal Concrete Floor Disposal Costs \$1,476 C. Concrete Footing Length of Concrete Footing (ft) Average Depth of Concrete Footing (ft) 142 4 Average Width of Concrete Footing (ft) 1 Volume of Concrete Footing (ft<sup>3</sup>) 568 Volume of Concrete Footing (cy) 21 Disposal Unit Cost (\$/cy) \$42.17 Subtotal Concrete Footing Disposal Costs \$887 Subtotal Disposal Costs per Building \$10,155 **Total Disposal Costs** IV. Health and Safety Costs Accounted for on GW REST SUBTOTAL BUILDING DEMOLITION AND DISPOSAL COSTS \$26,492

TOTAL BUILDING DEMOLITION AND DISPOSAL COSTS

#### Miscellaneous Reclamation

Total Area = 10.57 acres	I.	CF	P/Office Area/Pilot Plant/Maint. Shop/Chem. Storage/Yard Reclamation	
A. Concrete Pad Area of Concrete Pad (ft2) Demolition Cost Average Thickness of Concrete Floor (ft) Volume of Concrete Floor (ft3) Subtotal Concrete Floor (ft3) Subtotal Concrete Floor (ft3) Subtotal Concrete Floor (ft3) Subtotal Concrete Floor (ft3) Average haul distance (ft1) Average haul distance (ft1) Volume of Road Base Area (acres) Average Road Base Cepth (ft1) Volume of Road Base (ft2) Average Road Base (ft2) Average Road Base (ft2) Average Hold Road Base			Concrete Pad= 0.3 acres	
Area of Concrete Pad (ft2)   13068   Demoltition Cost   56.11     A verage Thickness of Concrete Floor (ft)   0.50     Volume of Concrete Floor (ft3)   6,534     Volume of Concrete Floor (t9)   242     Concrete Disposal On Site (Sev)   39.50     Subtotal Concrete Fad Demolition and Disposal Costs   82,268     B. Gravel Road Base Removal   1000     Gravel Road Base Removal   1000     Gravel Road Base Area (acres)   8.0     Average Road Base Depth (ft)   0.5     Volume of Road Base (ev)   6453     Moving Materials   51.44     Subtotal Gravel Road Base Removal Costs   93,306     C. Ripping Overburden with Dozer   0.66     Overburden Surface Area (acres)   10.6     Ripping Cost (per acre)   13.381.27     Subtotal Ripping Overburden Costs   14.600     D. Topsoil Application   460426     Average thickness of topsoil (ft)   0.5     Average haul distance (ft)   0.05     Surface grade (%)   0.5     Volume of Topsoil (cy)   8,256     Moving Materials   51.44     Subtotal Topsoil Application   51.296     E. Discing/Seeding Cost (S/acre)   33.30     Surface area (acres)   10.57     Discing/Seeding Cost (S/acre)   33.30     Surface Area (acres)   10.57     Discing/Seeding Cost (S/acre)   33.30     Surface Area (acres)   3.4     Average thickness of topsoil (ft)   0.5     Average thickness of topsoil (ft)   0.5     Average thickness of topsoil (ft)   0.5     Average Thickness of (ft)   0.5     Average Thickness of (ft)   0.5     Average Thickness of (ft)   0.5     Surface Area (acres)   0.5     Discing/Seeding Cost (S/acre)   33.30     Subtotal Topsoil Application Costs   3.1     Area of Asphalt (acres)   3.4     Area of Asphalt (acres)   3.4     Area of Asphalt (acres)   3.4     Area of Asphalt (acres)   3.1     Average Thickness (ft)   0.5     Average India (ft)   0.5     Average India (ft)   0.5     Average India (ft)   0.5     Average India (ft)   0.5     A		Δ		
Demolition Cost				13068
Volume of Concrete Floor (t3)         5,54           Volume of Concrete Pad Demolition and Disposal Costs         \$9,50           Subtotal Concrete Pad Demolition and Disposal Costs         \$9,50           B. Gravel Road Base Remowal         10000           Gravel Road Base Area (acres)         8,0           Average haul distance (th)         0.5           Volume of Road Base (ev)         6453           Moving Materials         \$1,44           Subtotal Gravel Road Base (ev)         4643           Moving Materials         \$1,46           Subtotal Gravel Road Base Removal Costs         \$10,6           Ripping Overburden with Dozer         10.6           Overburden Surface Area (acres)         10,6           Ripping Coverburden Costs         \$14,600           D. Topsoil Application         460426           Average thickness of topsoil (ft)         0.5           Average thaul distance (ft)         2000           Surface Area (seres)         10,5           Moving Materials         \$1,44           Subtotal Topsoil (ey)         \$,226           Moving Materials         \$1,44           Subtotal Topsoil Application Costs         \$12,29           E. Discing/Seeding Unit Cost (s/kare)         \$330           S			·	\$6.11
Volume of Concrete Pioro (cy)         242           Concrete Disposal On Site (Sév)         \$9.50           Subtotal Concrete Pad Demolition and Disposal Costs         \$82,080           B. Gravel Road Base Removal         1000           Average Road Base Act (acres)         8.0           Average Road Base Cetyh (ft)         0.5           Volume of Road Base (cy)         6453           Moving Materials         \$1,445           Subtotal Gravel Road Base Removal Costs         \$9,306           C. Ripping Overburden with Dozer         10.6           Overburden Surface Area (acres)         10.6           Ripping Cost (per acre)         \$1,381.27           Subtotal Ripping Overburden Costs         \$14,600           D. Topsoil Application         460426           Average hald distance (ft)         0.5           Average thickness of topsoil (ft)         0.5           Average hald distance (ft)         2000           Surface grade (%)         2000           Volume of Topsoil (cy)         \$,526           Moving Materials         \$1,245           Subtotal Topsoil Application Costs         \$12,295           E. Discing/Seeding         10.57           Discing/Seeding         10.57           Discing/Seeding			Average Thickness of Concrete Floor (ft)	0.50
Concrete Disposal On Site (Sicv)   Subtotal Concrete Pad Demolition and Disposal Costs   S82,080			Volume of Concrete Floor (ft3)	6,534
Subtotal Concrete Pad Demolition and Disposal Costs			Volume of Concrete Floor (cy)	242
B. Gravel Road Base Removal Average haul distance (ft)   1000 Gravel Road Base Arca (acres)   8.0 Average Road Base Depth (ft)   0.5 Volume of Road Base (ve)   6453 Moving Materials   \$1.44 Subtotal Gravel Road Base (rev)   6453 Moving Materials   \$1.44 Subtotal Gravel Road Base Removal Costs   \$9,306 Ripping Coverburden with Dozer Overburden With Dozer Overburden Surface Area (acres)   10.6 Ripping Coverburden Costs   \$13,81.27 Subtotal Ripping Overburden Costs   \$14,600 D. Topsoil Application   460426 Average thickness of topsoil (ft)   0.5 Average thickness of topsoil (ft)   0.5 Average haul distance (ft)   2000 Surface grade (%)   2000 Average thickness of topsoil (ft)   2000 Surface grade (%)   2000 Surface Grade (ft)   2000 Surface Grade (ft)   2000 Surface Grade (ft)   2000 Surface Grade (ft)   2000 Surface Area (acres)   10.57 Discing/Seeding Unit Cost (S/acre)   3330 Subtotal Discing/Seeding Costs   33,488 Total CPP/Office/Yard Area Reclamation   3121,770 Subtotal Discing/Seeding Costs   33,488 Ripping Cost (per acre)   3958.14 Average Thickness (ft)   0.50 Moving Materials (0% Grade)   31.208 Volume of Asphalt (acres)   3.4 Ripping Cost (per acre)   3958.14 Average Thickness (ft)   0.50 Moving Materials (ft)   0.50 Moving				
Average haul distance (ft) 6.00 Gravel Road Base Area (acres) 8.0 Average Road Base Cepth (ft) 0.5 Volume of Road Base (cy) 6433 Moving Materials 5.144 Subtotal Gravel Road Base Removal Costs 5.9,306 C. Ripping Overburden with Dozer Overburden Surface Area (acres) 10.6 Ripping Cost (per acre) \$1,381.27 Subtotal Ripping Overburden Costs 514,600 D. Topsoil Application Average haul distance (ft2) 460426 Average thickness of topsoil (ft) 0.5 Average haul distance (ft) 2.00 Surface grade (%) 2.10 Volume of Topsoil (cy) 8,526 Moving Materials 51.44 Subtotal Topsoil Application Costs 512,296 E. Discing/Seeding Unit Cost (S'acre) 3330 Subtotal Discing/Seeding Costs 53,488 Total CPP/Office Area Reclamation (Highland) Concrete Pad= 0.3 acres Total Area = 10 acres A. Asphalt Area of Asphalt (acres) 3.4 Ripping Cost (per acre) 3.5 Robotal Asphalt Ripping and Disposal Costs 3.1,208 Noving Materials (%) 6.00 Noving Materials (%) 5.1 Concrete Pad= 0.3 acres 5.1 Discing/Seeding Unit Cost (S'acre) 5.1 Subtotal Topsoil (cy) 5.5 Subtotal Topsoil (ft) 0.5 Asphalt Area of Asphalt (acres) 5.1 Asphalt Area of Asphalt (acres) 5.1 Asphalt Ripping Cost (per acre) 5.5 Subtotal Asphalt Ripping and Disposal Costs 5.1 Subtotal Asphalt Ripping and Disposal Costs 5.1 Subtotal Ripping Overburden with Dozer 6.1 Overburden Surface Area (acres) 1.0 Ripping Cost (per acre) 1.3 Subtotal Ripping Overburden Costs 5.1		_	•	\$82,080
Gravel Road Base Area (acres)		В.		1000
Average Road Base Depth (ft) Volume of Road Base (cy) Avoing Materials Subtotal Gravel Road Base Removal Costs Sp,306 C. Ripping Overburden with Dozer Overburden Surface Area (acres) Subtotal Ripping Cost (per acre) Subtotal Ripping Overburden Costs S14,600 D. Topsoil Application Area of surface disturbance (ft2) Average thickness of topsoil (ft) Average haul distance (ft) Subtotal Topsoil (cy) Nolume of Topsoil (cy) Nolume of Topsoil (cy) Surface grade (%) Volume of Topsoil (cy) Surface Area (acres) Discing/Seeding Unit Cost (S/acre) Subtotal Discing/Seeding Costs Total CPP/Office/Yard Area Reclamation Concrete Pad= 0.3 acres Total Area = 10 acres A. Asphalt Area of Asphalt (acres) Noving Materials (0% Grade) Volume of Asphalt (cy) Surface Area (acres) Subtotal Area = 10 acres A. Asphalt Area of Asphalt (acres) Subtotal Area = 10 acres A. Ripping Cost (per acre) Subtotal Asphalt Ripping and Disposal Costs Subtotal Asphalt Ripping overburden with Dozer Overburden Surface Area (acres) Subtotal Ripping Overburden Costs C. Topsoil Application Area of surface disturbance (ft2) Average bitckness of topsoil (ft) Average shald distance (ft) Subtotal Ripping Overburden Costs Subtotal Ripping O				
Volume of Road Base (ey)				
Moving Materials   Subtotal Gravel Road Base Removal Costs   Sp,306			÷ 1,7	
Subtotal Gravel Road Base Removal Costs   Sp,306   C. Ripping Overburden with Dozer   Overburden Surface Area (acres)   10.6   Ripping Cost (per acre)   \$1,381.27   Subtotal Ripping Overburden Costs   \$1,381.27   Subtotal Ripping Overburden Costs   \$1,4600   D. Topsoil Application			1.7.	
C. Ripping Overburden Surface Area (acres)         10.6           Ripping Cost (per acre)         \$1,381.27           Subtotal Ripping Overburden Costs         \$14,600           D. Topsoil Application         460426           Average thickness of topsoil (ft)         0.5           Average thickness of topsoil (ft)         0.5           Average haul distance (ft)         2.00           Surface grade (%)         \$1,249           Volume of Topsoil (cy)         8,526           Moving Materials         \$1,44           Subtotal Topsoil Application Costs         \$12,296           E. Dissing/Seeding         \$10,57           Discing/Seeding Unit Cost (S/acre)         \$330           Subtotal Discing/Seeding Costs         \$3,48           Total CPP/Office Area Reclamation (Highland)         \$12,770           Concrete Pad= 0.3 acres         Total Area = 10 acres           A. Asphalt         Area of Asphalt (acres)         3.4           Ripping Cost (per acre)         \$958.1           A. Asphalt         Average Thickness (ft)         0.5           Moving Materials (0% Grade)         \$1.208           Volume of Asphalt (cy)         2,743           Disposal Cost         \$34,217           Subtotal Asphalt Ripping and Disposal Costs </td <td></td> <td></td> <td><u> </u></td> <td></td>			<u> </u>	
Overburden Surface Area (acres)   10.6   Ripping Cost (per acree)   \$1,381.27     Subtotal Ripping Overburden Costs   \$14,600     D. Topsoil Application   Area of surface disturbance (ft2)   460426     A Average thickness of topsoil (ft)   0.5     A Average haul distance (ft)   2000     Surface grade (%)   2000     Surface grade (%)   45.26     Volume of Topsoil (cy)   8,526     Moving Materials   \$1.44     Subtotal Topsoil Application Costs   \$12,296     E. Discing/Seeding   10.57   10.57     Discing/Seeding Unit Cost (S/acre)   \$330     Subtotal Discing/Seeding Costs   \$3,488     Total CPP/Office/Yard Area Reclamation   \$121,770     II. CPF/Office Area Reclamation (Highland)   Concrete Pad=0.3 acres   7     Total Area = 10 acres   3.4     A Asphalt   Area of Asphalt (cares)   3.4     A Ripping Cost (per acre)   3.5     A Nowing Materials (0% Grade)   3.1208     Volume of Asphalt (cy)   2,743     Disposal Cost   \$42.17     Subtotal Asphalt Ripping and Disposal Costs   \$130,487     B. Ripping Cost (per acre)   \$1,208     Volume of Asphalt (cy)   2,743     Disposal Cost   \$42.17     Subtotal Asphalt Ripping and Disposal Costs   \$130,487     B. Ripping Cost (per acre)   \$1,381.27     Subtotal Ripping Overburden with Dozer   Overburden with Dozer   Overburden Surface Area (acres)   10.6     Ripping Cost (per acre)   \$1,381.27     Subtotal Ripping Overburden Costs   \$1,381.27     Subtotal Ripping Overburden Costs   \$1,208     A Average thickness of topsoil (ft)   0.5     A Average thickness of topsoil (ft)   0.5     A Verage thickness of topsoil (ft)   0.5     A Verage pade (%)   0.9     A Verage pade (%)   0.9     Surface grade (%)   0.9     A Verage flickness of topsoil (ft)   0.5     A Verage flickness of topsoil (ft)   0.5     Discing/Seeding Unit Cost (S/acre)   3330     Sustotal Discing/Seeding Costs   342,20     Discing/Seeding Unit Cost (S/acre)   3330     Subtotal Discing/Seeding Costs   342,20     A Verage flickness of topsoil (ft)   0.5     A Verage flickness of topsoil (ft)   0.5     A Verage flicknes		C.		Ψ,,500
Ripping Cost (per acre)		٠.	1. 0	10.6
D. Topsoil Application				\$1,381.27
Area of surface disturbance (ft2) Average thickness of topsoil (ft) Average thickness of topsoil (th) Average thickness of topsoil (th) Surface grade (%) Volume of Topsoil (cy) Noving Materials Subtotal Topsoil Application Costs Surface Area (acres) Discing/Seeding Surface Area (acres) Discing/Seeding Unit Cost (S/acre) Subtotal Discing/Seeding Costs Subtotal Discing/Seeding Costs Subtotal Discing/Seeding Costs Total CPP/Office/Yard Area Reclamation Concrete Pad= 0.3 acres Total Area = 10 acres  A. Asphalt Area of Asphalt (acres) Ripping Cost (per acre) Average Thickness (ft) Moving Materials (0% Grade) Volume of Asphalt (cy) Disposal Cost Subtotal Asphalt Ripping and Disposal Costs Sipping Overburden with Dozer Overburden Surface Area (acres) Ripping Overburden Costs Subtotal Ripping Overburden Costs Subtotal Ripping Overburden Costs C. Topsoil Application Area of surface disturbance (ft2) Average thickness of topsoil (ft) Average thickness of topsoil (ft) Average hand distance (ft) Average hand distance (ft) Sufface Area (acres) Full Subtotal Ripping Overburden Costs Subtotal Topsoil Application Sufface grade (%) Volume of Topsoil (cy) Average hand distance (ft) Average hand distance (ft) Sufface Area (acres) Subtotal Topsoil Application Costs Subtotal Discing/Seeding Unit Cost (S/acre) Subtotal Discing/Seeding Costs			Subtotal Ripping Overburden Costs	\$14,600
Average hickness of topsoil (ft)		D.	Topsoil Application	
Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Moving Materials Subtotal Topsoil Application Costs  E. Discing/Seeding Surface Area (acres) Discing/Seeding Unit Cost (\$/acre) Subtotal Discing/Seeding Costs Total CPP/Office/Yard Area Reclamation  II. CPF/Office Area Reclamation (Highland) Concrete Pad= 0.3 acres Total Area = 10 acres  A. Asphalt Area of Asphalt (acres) Moving Materials (0% Grade) Volume of Asphalt (cy) Disposal Cost Subtotal Asphalt Ripping and Disposal Costs B. Ripping Overburden with Dozer Overburden Surface Area (acres) Subtotal Ripping Overburden Costs C. Topsoil Application Area of surface disturbance (ft2) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Moving Materials (0% Grade) Subtotal Disposal Costs Sibototal Ripping Overburden Costs Subtotal Ripping Overburden Costs C. Topsoil Application Area of surface disturbance (ft2) Average haul distance (ft) Surface grade (%) Volume of Topsoil (cy) Moving Materials (0% Grade) Surface Area (acres) Subtotal Topsoil Application Costs Sibototal Topsoil Application Costs Subtotal Ripping Overburden Costs Subtotal Ripping Cost (per acre) Subtotal Ripping Overburden Costs Subtotal Ripping Cost (per acre) Subtotal Ripping Cost (			Area of surface disturbance (ft2)	460426
Surface grade (%)   Volume of Topsoil (cy)   Suppose (continuous)			Average thickness of topsoil (ft)	
Volume of Topsoil (cy)   8,526   Moving Materials   \$1.44   Subtotal Topsoil Application Costs   \$12,296   E. Discing/Seeding   Surface Area (acres)   10.57   Discing/Seeding Unit Cost (\$/acre)   \$330   Subtotal Discing/Seeding Unit Cost (\$/acre)   \$330   Subtotal Discing/Seeding Costs   \$3,488   Total CPP/Office/Yard Area Reclamation   \$121,770     II.   CPF/Office Area Reclamation (Highland)   Concrete Pad= 0.3 acres   Total Area = 10 acres   A. Asphalt   Average Thickness (ft)   \$34,4   Average Thickness (ft)   \$35,4   Average thickness of topsoil (ft)   \$35,4   Average			- , , ,	2000
Moving Materials   \$1.44     Subtotal Topsoil Application Costs   \$12,296     E. Discing/Seeding   \$10.57     Discing/Seeding Unit Cost (\$/acre)   \$330     Subtotal Discing/Seeding Costs   \$3,488     Total CPP/Office/Yard Area Reclamation   \$121,770     II. CPF/Office Area Reclamation (Highland)   Concrete Pad= 0.3 acres   Total Area = 10 acres     A. Asphalt   Area of Asphalt (acres)   3.4     Ripping Cost (per acre)   \$958.14     Average Thickness (ft)   0.50     Moving Materials (0% Grade)   \$1.208     Volume of Asphalt (cy)   2.743     Discing/Seeding Cost (per acre)   \$42.17     Subtotal Asphalt Ripping and Disposal Costs   \$42.17     Subtotal Asphalt Ripping and Disposal Costs   \$130,487     B. Ripping Overburden with Dozer   \$1,381.27     Subtotal Ripping Overburden Costs   \$1,360     C. Topsoil Application   \$1,060     Average thickness of topsoil (ft)   0.5     Average haul distance (ft.2)   130680     Average haul distance (ft.2)   2,420     Moving Materials (0% Grade)   \$1,65     Subtotal Topsoil Application Costs   \$3,4001     D. Discing/Seeding   \$1,200     Surface Area (acres)   \$1,301     Discing/Seeding Unit Cost (\$/acre)   \$330     Subtotal Discing/Seeding Unit Cost (\$/acre)   \$330     Subtotal Discing/Seeding Costs   \$4,200     Surface Area (acres)   \$330     Surface Area (acres)   \$330     Augustotal Discing/Seeding Costs			<u> </u>	
Subtotal Topsoil Application Costs   \$12,296   E. Discing/Seeding   \$10.57   \$10.5			* ***	
E. Discing/Seeding   Surface Area (acres)   10.57   Discing/Seeding Unit Cost (\$/acre)   \$330   \$340   \$3				
10.57   Discing/Seeding Unit Cost (\$/acre)   \$3330   Subtotal Discing/Seeding Costs   \$3,488   Total CPP/Office/Yard Area Reclamation   \$121,770   \$11.   CPF/Office Area Reclamation (Highland)   Concrete Pad= 0.3 acres   Total Area = 10 acres   A. Asphalt   Area of Asphalt (acres)   3.4   Ripping Cost (per acre)   \$958.14   Average Thickness (ft)   0.50   Moving Materials (0% Grade)   \$1,208   Volume of Asphalt (cy)   2,743   Disposal Cost   \$42.17   Subtotal Asphalt Ripping and Disposal Costs   \$130,487   B. Ripping Overburden with Dozer   Overburden Surface Area (acres)   10.6   Ripping Cost (per acre)   \$1,381.27   Subtotal Ripping Overburden Costs   \$14,600   C. Topsoil Application   Area of surface disturbance (ft2)   Average thickness of topsoil (ft)   0.5   Average haul distance (ft)   2000   Surface grade (%)   0.9%   Volume of Topsoil (cy)   2,420   Moving Materials (0% Grade)   \$1,65   Subtotal Topsoil Application   \$2,400   Moving Materials (0% Grade)   \$1,65   Subtotal Topsoil Application   \$2,400   Moving Materials (0% Grade)   \$1,65   Subtotal Topsoil Application Costs   \$3,4001   D. Discing/Seeding Unit Cost (\$/acre)   \$330   Subtotal Discing/Seeding Costs   \$4,290   S		17		\$12,290
Discing/Seeding Unit Cost (\$/acre)		E.	<u> </u>	10.57
Subtotal Discing/Seeding Costs   \$3,488   Total CPP/Office/Yard Area Reclamation   \$121,770   Total CPP/Office Area Reclamation (Highland)   Concrete Pad= 0.3 acres				
Total CPP/Office/Yard Area Reclamation   \$121,770     II.   CPF/Office Area Reclamation (Highland)     Concrete Pad= 0.3 acres   Total Area = 10 acres     A. Asphalt     Area of Asphalt (acres)   3.4     Ripping Cost (per acre)   \$958.14     Average Thickness (ft)   0.50     Moving Materials (0% Grade)   1.208     Volume of Asphalt (cy)   2,743     Disposal Cost   \$42.17     Subtotal Asphalt Ripping and Disposal Costs   \$42.17     Subtotal Asphalt Ripping and Disposal Costs   \$130,487     B. Ripping Overburden with Dozer   Overburden Surface Area (acres)   10.6     Ripping Cost (per acre)   \$1,381.27     Subtotal Ripping Overburden Costs   \$14,600     C. Topsoil Application   130680     Average thickness of topsoil (ft)   0.5     Average thickness of topsoil (ft)   0.5     Average haul distance (ft)   2000     Surface grade (%)   0%     Volume of Topsoil (cy)   2,420     Moving Materials (0% Grade)   \$1.65     Subtotal Topsoil Application Costs   \$4,001     D. Discing/Seeding   13     Discing/Seeding Unit Cost (\$/acre)   \$330     Subtotal Discing/Seeding Costs   \$4,290     Application Cos				
II. CPF/Office Area Reclamation (Highland)         Concrete Pad= 0.3 acres         Total Area = 10 acres         A. Asphalt         Area of Asphalt (acres)       3.4         Ripping Cost (per acre)       \$958.14         Average Thickness (ft)       0.50         Moving Materials (0% Grade)       \$1.208         Volume of Asphalt (cy)       2,743         Disposal Cost       \$42.17         Subtotal Asphalt Ripping and Disposal Costs       \$130,487         B. Ripping Overburden with Dozer       0verburden Surface Area (acres)       10.6         Ripping Cost (per acre)       \$1,381.27         Subtotal Ripping Overburden Costs       \$14,600         C. Topsoil Application       \$14,600         Area of surface disturbance (ft2)       130680         Average thickness of topsoil (ft)       0.5         Average haul distance (ft)       0.5         Surface grade (%)       0%         Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       \$13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290		To		•
Concrete Pad= 0.3 acres   Total Area = 10 acres     A. Asphalt				ŕ
Total Area = 10 acres   A. Asphalt	II.	CF	F/Office Area Reclamation (Highland)	
A. Asphalt     Area of Asphalt (acres)			Concrete Pad= 0.3 acres	
Area of Asphalt (acres) 3.4 Ripping Cost (per acre) \$958.14 Average Thickness (ft) 0.50 Moving Materials (0% Grade) \$1.208 Volume of Asphalt (cy) 2,743 Disposal Cost \$42.17 Subtotal Asphalt Ripping and Disposal Costs \$130,487 B. Ripping Overburden with Dozer Overburden Surface Area (acres) 10.6 Ripping Cost (per acre) \$1,381.27 Subtotal Ripping Overburden Costs \$14,600 C. Topsoil Application Area of surface disturbance (ft2) 130680 Average thickness of topsoil (ft) 0.5 Average haul distance (ft) 2000 Surface grade (%) 0% Volume of Topsoil (cy) 2,420 Moving Materials (0% Grade) \$1.65 Subtotal Topsoil Application Costs \$4,001 D. Discing/Seeding Surface Area (acres) 13 Discing/Seeding Unit Cost (\$/acre) \$330 Subtotal Discing/Seeding Costs \$4,290				
Ripping Cost (per acre)       \$958.14         Average Thickness (ft)       0.50         Moving Materials (0% Grade)       \$1.208         Volume of Asphalt (cy)       2,743         Disposal Cost       \$42.17         Subtotal Asphalt Ripping and Disposal Costs       \$130,487         B. Ripping Overburden with Dozer       0verburden surface Area (acres)       10.6         Ripping Cost (per acre)       \$1,381.27         Subtotal Ripping Overburden Costs       \$14,600         C. Topsoil Application       3130680         Average thickness of topsoil (ft)       0.5         Average thickness of topsoil (ft)       0.5         Average haul distance (ft)       2000         Surface grade (%)       0%         Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290		A.	•	
Average Thickness (ft) 0.50  Moving Materials (0% Grade) \$1.208  Volume of Asphalt (cy) 2,743  Disposal Cost \$42.17  Subtotal Asphalt Ripping and Disposal Costs \$130,487  B. Ripping Overburden with Dozer  Overburden Surface Area (acres) 10.6  Ripping Cost (per acre) \$1,381.27  Subtotal Ripping Overburden Costs \$14,600  C. Topsoil Application  Area of surface disturbance (ft2) 130680  Average thickness of topsoil (ft) 0.5  Average haul distance (ft) 2000  Surface grade (%) 0%  Volume of Topsoil (cy) 2,420  Moving Materials (0% Grade) \$1.65  Subtotal Topsoil Application Costs \$4,001  D. Discing/Seeding  Surface Area (acres) 13  Discing/Seeding Unit Cost (\$/acre) \$330  Subtotal Discing/Seeding Costs \$4,290				
Moving Materials (0% Grade)       \$1.208         Volume of Asphalt (cy)       2,743         Disposal Cost       \$42.17         Subtotal Asphalt Ripping and Disposal Costs       \$130,487         B. Ripping Overburden with Dozer       10.6         Overburden Surface Area (acres)       10.6         Ripping Cost (per acre)       \$1,381.27         Subtotal Ripping Overburden Costs       \$14,600         C. Topsoil Application       130680         Average thickness of topsoil (ft)       0.5         Average thickness of topsoil (ft)       0.5         Average haul distance (ft)       2000         Surface grade (%)       0%         Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290				
Volume of Asphalt (cy)       2,743         Disposal Cost       \$42.17         Subtotal Asphalt Ripping and Disposal Costs       \$130,487         B. Ripping Overburden with Dozer       0verburden Surface Area (acres)       10.6         Ripping Cost (per acre)       \$1,381.27         Subtotal Ripping Overburden Costs       \$14,600         C. Topsoil Application       130680         Area of surface disturbance (ft2)       130680         Average thickness of topsoil (ft)       0.5         Average haul distance (ft)       2000         Surface grade (%)       0%         Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290			<del>-</del>	
Disposal Cost         \$42.17           Subtotal Asphalt Ripping and Disposal Costs         \$130,487           B. Ripping Overburden with Dozer         10.6           Overburden Surface Area (acres)         10.6           Ripping Cost (per acre)         \$1,381.27           Subtotal Ripping Overburden Costs         \$14,600           C. Topsoil Application         130680           Area of surface disturbance (ft2)         130680           Average thickness of topsoil (ft)         0.5           Average haul distance (ft)         2000           Surface grade (%)         0%           Volume of Topsoil (cy)         2,420           Moving Materials (0% Grade)         \$1.65           Subtotal Topsoil Application Costs         \$4,001           D. Discing/Seeding         13           Discing/Seeding Unit Cost (\$/acre)         \$330           Subtotal Discing/Seeding Costs         \$4,290			· ,	-
Subtotal Asphalt Ripping and Disposal Costs       \$130,487         B. Ripping Overburden with Dozer <ul> <li>Overburden Surface Area (acres)</li> <li>Ripping Cost (per acre)</li> <li>S1,381.27</li> </ul> \$13,881.27         Subtotal Ripping Overburden Costs       \$14,600         C. Topsoil Application       130680         Area of surface disturbance (ft2)       130680         Average thickness of topsoil (ft)       0.5         Average haul distance (ft)       2000         Surface grade (%)       0%         Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       \$13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290				•
B. Ripping Overburden with Dozer       10.6         Overburden Surface Area (acres)       10.6         Ripping Cost (per acre)       \$1,381.27         Subtotal Ripping Overburden Costs       \$14,600         C. Topsoil Application       130680         Average thickness of topsoil (ft)       0.5         Average haul distance (ft)       2000         Surface grade (%)       0%         Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290			·	
Overburden Surface Area (acres)         10.6           Ripping Cost (per acre)         \$1,381.27           Subtotal Ripping Overburden Costs         \$14,600           C. Topsoil Application         130680           Area of surface disturbance (ft2)         130680           Average thickness of topsoil (ft)         0.5           Average haul distance (ft)         2000           Surface grade (%)         0%           Volume of Topsoil (cy)         2,420           Moving Materials (0% Grade)         \$1.65           Subtotal Topsoil Application Costs         \$4,001           D. Discing/Seeding         13           Discing/Seeding Unit Cost (\$/acre)         \$330           Subtotal Discing/Seeding Costs         \$4,290		B.		4150,107
Ripping Cost (per acre)       \$1,381.27         Subtotal Ripping Overburden Costs       \$14,600         C. Topsoil Application       130680         Area of surface disturbance (ft2)       130680         Average thickness of topsoil (ft)       0.5         Average haul distance (ft)       2000         Surface grade (%)       0%         Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290				10.6
Subtotal Ripping Overburden Costs       \$14,600         C. Topsoil Application       130680         Area of surface disturbance (ft2)       130680         Average thickness of topsoil (ft)       0.5         Average haul distance (ft)       2000         Surface grade (%)       0%         Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290			· ·	
Area of surface disturbance (ft2)  Average thickness of topsoil (ft)  Average haul distance (ft)  Surface grade (%)  Volume of Topsoil (cy)  Moving Materials (0% Grade)  Subtotal Topsoil Application Costs  Discing/Seeding  Surface Area (acres)  Discing/Seeding Unit Cost (\$/acre)  Subtotal Discing/Seeding Costs  Subtotal Discing/Seeding Costs			, , , , , , , , , , , , , , , , , , ,	
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Average haul distance (ft) 2000 Surface grade (%) 0% Volume of Topsoil (cy) 2,420 Moving Materials (0% Grade) \$1.65 Subtotal Topsoil Application Costs \$4,001 D. Discing/Seeding Surface Area (acres) 13 Discing/Seeding Unit Cost (\$/acre) \$330 Subtotal Discing/Seeding Costs \$4,290			Area of surface disturbance (ft2)	130680
Surface grade (%)       0%         Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       13         Surface Area (acres)       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290				
Volume of Topsoil (cy)       2,420         Moving Materials (0% Grade)       \$1.65         Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       13         Surface Area (acres)       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290				
Moving Materials (0% Grade) \$1.65 Subtotal Topsoil Application Costs \$4,001  D. Discing/Seeding Surface Area (acres) 13 Discing/Seeding Unit Cost (\$/acre) \$330 Subtotal Discing/Seeding Costs \$4,290				
Subtotal Topsoil Application Costs       \$4,001         D. Discing/Seeding       13         Surface Area (acres)       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290			• '•	•
D. Discing/Seeding       13         Surface Area (acres)       13         Discing/Seeding Unit Cost (\$/acre)       \$330         Subtotal Discing/Seeding Costs       \$4,290			· · · · · · · · · · · · · · · · · · ·	
Surface Area (acres) 13 Discing/Seeding Unit Cost (\$/acre) \$330 Subtotal Discing/Seeding Costs \$4,290		ъ	•	\$4,001
Discing/Seeding Unit Cost (\$/acre) \$330 Subtotal Discing/Seeding Costs \$4,290		IJ.		12
Subtotal Discing/Seeding Costs \$4,290				
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III.	Ac	cess Road Reclamation (includes culverts)	SR CPP Access Rd.	CPP to SAT	Access to WF
		Assumptions			
		Surface grade	1%	5%	5%
		Length of Road (ft)	5,173	15,827	15,557
		Width of Road (ft)	40	30	14
		Area of road (acres)	4.8	10.9	5.0
	B.	· · · ·			
		Assumptions			
		Average Haul Distance (feet)	500	500	500
		Average Thickness of Asphalt (ft)	0.5	0.5	0.5
		Ripping Cost (per acre)	\$958.14	\$958.14	\$958.14
		Volume of Asphalt (cy)	3832	8793	4033
		Moving Materials	\$1.65	\$1.65	\$1.65
		Subtotal Ripping and Hauling Asphalt	\$10,887	\$24,981	\$11,459
	В.	Gravel Road Base Removal			
	۷.	Average haul distance (ft)	1000	1000	1000
		Gravel Road Base Width (ft)	30	20	10
		Gravel Road Base Area (acres)	3.56	7.27	3.57
		Average Road Base Depth (ft)	0.75	0.5	0.5
		Volume of Road Base (cy)	4311	5862	2881
		Moving Materials	\$1.44	\$1.44	\$1.44
		Subtotal Gravel Road Base Removal Costs	\$6,217	\$8,453	\$4,155
	C.	Ripping Overburden with Dozer	•	•	•
		Overburden Surface Area (acres)	4.8	10.9	5.0
		Ripping Cost (per Acre)	\$1,381.27	\$1,381.27	\$1,381.27
		Subtotal Ripping Overburden Costs	\$6,561	\$15,056	\$6,906
	D.	7		•	
		Average haul distance (ft)	1500	1500	1500
		Topsoil Surface Area (ft2)	206920	474810	217798
		Depth of Topsoil (ft)	0.5	0.5	0.5
		Volume of Topsoil (cy)	3832	8793	4033
		Moving Materials	\$1.44	\$1.44	\$1.44
		Subtotal Topsoil Application Costs	\$5,526	\$12,680	\$5,816
	E.	Discing/Seeding			
		Surface Area (acres)	4.8	10.9	5.0
		Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330
		Subtotal Discing/Seeding Costs	\$1,568	\$3,597	\$1,650
	Μι	altiplier for Projected Additions	0		1
	Sul	btotal Reclamation Costs per Access Road	\$30,759	\$64,767	\$59,972
	To	tal Access Road Reclamation Costs	\$423,090		

			MU-15		
III.		cess Road Reclamation (includes culverts)	Access	SR2 Access	Reynolds Access
	A.	Assumptions			
		Surface grade	0%	5%	
		Length of Road (ft)	10,560	8,500	
		Width of Road (ft)	30	30	
		Area of road (acres)	7.3	5.9	1.7
	B.	Ripping and Hauling Asphalt			
		Assumptions			
		Average Haul Distance (feet)	500	500	
		Average Thickness of Asphalt (ft)	0.5	0.5	0.5
		Ripping Cost (per acre)	\$958.14	\$958.14	\$958.14
		Volume of Asphalt (cy)	5867	4722	1389
		Moving Materials	\$1.65	\$1.65	\$1.65
		Subtotal Ripping and Hauling Asphalt	\$16,668	\$13,416	\$3,946
	В.	Gravel Road Base Removal			
		Average haul distance (ft)	1000	1000	1000
		Gravel Road Base Width (ft)	20	20	20
		Gravel Road Base Area (acres)	4.85	3.90	1.15
		Average Road Base Depth (ft)	0.5	0.5	0
		Volume of Road Base (cy)	3911	3148	0
		Moving Materials	\$1.44	\$1.44	\$1.44
		Subtotal Gravel Road Base Removal Costs	\$5,640	\$4,540	
	C.		•		
		Overburden Surface Area (acres)	7.3	5.9	1.7
		Ripping Cost (per Acre)	\$1,381.27	\$1,381.27	\$1,381.27
		Subtotal Ripping Overburden Costs	\$10,046	\$8,086	· ·
	D.	Topsoil Application	ŕ	ŕ	•
		Average haul distance (ft)	1500	1500	1500
		Topsoil Surface Area (ft2)	316800	255000	75000
		Depth of Topsoil (ft)	0.5	0.5	0.5
		Volume of Topsoil (cy)	5867	4722	1389
		Moving Materials	\$1.44	\$1.44	\$1.44
		Subtotal Topsoil Application Costs	\$8,460	\$6,810	\$2,003
	E.	Discing/Seeding			
		Surface Area (acres)	7.3	5.9	1.7
		Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330
		Subtotal Discing/Seeding Costs	\$2,400	\$1,932	\$568
	Μι	altiplier for Projected Additions	0	O	
	Su	btotal Reclamation Costs per Access Road	\$43,214	\$34,784	\$8,895

III.		cess Road Reclamation (includes culverts)	Access SRHUP 7	Access SRHUP 8
	A.	Assumptions		
		Surface grade	0%	
		Length of Road (ft)	1,500	11,250
		Width of Road (ft)	20	
		Area of road (acres)	0.7	5.2
	В.	Ripping and Hauling Asphalt		
		Assumptions		
		Average Haul Distance (feet)	500	
		Average Thickness of Asphalt (ft)	0.5	0.5
		Ripping Cost (per acre)	\$958.14	\$958.14
		Volume of Asphalt (cy)	556	4167
		Moving Materials	\$1.65	\$1.65
		Subtotal Ripping and Hauling Asphalt	\$1,578	\$11,838
	В.	Gravel Road Base Removal		
		Average haul distance (ft)	1000	1000
		Gravel Road Base Width (ft)	20	20
		Gravel Road Base Area (acres)	0.69	5.17
		Average Road Base Depth (ft)	0	0
		Volume of Road Base (cy)	0	0
		Moving Materials	\$1.44	\$1.44
		Subtotal Gravel Road Base Removal Costs	\$0	\$0
	C.	Ripping Overburden with Dozer		
		Overburden Surface Area (acres)	0.7	5.2
		Ripping Cost (per Acre)	\$1,381.27	\$1,381.27
		Subtotal Ripping Overburden Costs	\$951	\$7,135
	D.	Topsoil Application		
		Average haul distance (ft)	1500	1500
		Topsoil Surface Area (ft2)	30000	225000
		Depth of Topsoil (ft)	0.5	0.5
		Volume of Topsoil (cy)	556	4167
		Moving Materials	\$1.44	\$1.44
		Subtotal Topsoil Application Costs	\$801	\$6,009
	E.	Discing/Seeding		
		Surface Area (acres)	0.7	5.2
		Discing/Seeding Unit Cost (\$/acre)	\$330	\$330
		Subtotal Discing/Seeding Costs	\$227	\$1,705
	Mu	ltiplier for Projected Additions	0	0
	Sul	ototal Reclamation Costs per Access Road	\$3,557	\$26,687

**Total Access Road Reclamation Costs** 

m.	Ac	cess Road Reclamation (includes culverts)	Access SRHUP 10 from MU-4	Highland CPP/Office Area
		Assumptions		
		Surface grade	0%	5%
		Length of Road (ft)	2,500	13,200
		Width of Road (ft)	20	25
		Area of road (acres)	1.1	7.6
	B.	Ripping and Hauling Asphalt		
		Assumptions		
		Average Haul Distance (feet)	500	5500
		Average Thickness of Asphalt (ft)	0.5	0.5
		Ripping Cost (per acre)	\$958.14	\$958.14
		Volume of Asphalt (cy)	926	6111
		Moving Materials	\$1.65	\$1.65
		Subtotal Ripping and Hauling Asphalt	\$2,631	\$17,362
	В.	Gravel Road Base Removal		
	_,	Average haul distance (ft)	1000	0
		Gravel Road Base Width (ft)	20	
		Gravel Road Base Area (acres)	1.15	
		Average Road Base Depth (ft)	0	
		Volume of Road Base (cy)	0	0
		Moving Materials	\$1.44	\$1.44
		Subtotal Gravel Road Base Removal Costs	\$0	
	C.	Ripping Overburden with Dozer		
		Overburden Surface Area (acres)	1.1	0.0
		Ripping Cost (per Acre)	\$1,381.27	\$1,381.27
		Subtotal Ripping Overburden Costs	\$1,585	
	D.	Topsoil Application	ŕ	
		Average haul distance (ft)	1500	1500
		Topsoil Surface Area (ft2)	50000	330000
		Depth of Topsoil (ft)	0.5	0.5
		Volume of Topsoil (cy)	926	6111
		Moving Materials	\$1.44	\$1.44
		Subtotal Topsoil Application Costs	\$1,335	\$8,813
	E.	Discing/Seeding		
		Surface Area (acres)	1.1	7.6
		Discing/Seeding Unit Cost (\$/acre)	\$330	\$330
		Subtotal Discing/Seeding Costs	\$379	\$2,500
	Μι	ultiplier for Projected Additions	0	0
	Sul	ototal Reclamation Costs per Access Road	\$5,930	\$28,675

III.	Ac	cess Road Reclamation (includes culverts)	Sat No. 1	Sat No. 3
	A.	Assumptions		
		Surface grade	0%	0%
		Length of Road (ft)	15,840	5,280
		Width of Road (ft)	30	30
		Area of road (acres)	10.9	3.6
	В.	Ripping and Hauling Asphalt		
		Assumptions		
		Average Haul Distance (feet)	0	0
		Average Thickness of Asphalt (ft)	0.5	0.5
		Ripping Cost (per acre)	\$958.14	\$958.14
		Volume of Asphalt (cy)	8800	2933
		Moving Materials	\$1.65	\$1.65
		Subtotal Ripping and Hauling Asphalt	\$25,002	\$8,334
	B.	Gravel Road Base Removal		
		Average haul distance (ft)	1000	1000
		Gravel Road Base Width (ft)	14	14
		Gravel Road Base Area (acres)	5.09	1.70
		Average Road Base Depth (ft)	0	0
		Volume of Road Base (cy)	0	0
		Moving Materials	\$1.44	\$1.44
		Subtotal Gravel Road Base Removal Costs	\$0	\$0
	C.	Ripping Overburden with Dozer		
		Overburden Surface Area (acres)	10.9	3.6
		Ripping Cost (per Acre)	\$1,381.27	\$1,381.27
		Subtotal Ripping Overburden Costs	\$15,068	\$5,023
	D.	Topsoil Application	,	·
		Average haul distance (ft)	1500	1500
		Topsoil Surface Area (ft2)	475200	158400
		Depth of Topsoil (ft)	0.5	0.5
		Volume of Topsoil (cy)	8800	2933
		Moving Materials	\$1.44	\$1.44
		Subtotal Topsoil Application Costs	\$12,690	\$4,230
	E.	Discing/Seeding	,	,
		Surface Area (acres)	10.9	3.6
		Discing/Seeding Unit Cost (\$/acre)	\$330	\$330
		Subtotal Discing/Seeding Costs	\$3,600	\$1,200
	Mu	altiplier for Projected Additions	0	0
		ototal Reclamation Costs per Access Road	\$56,360	\$18,787

ш.	Ac	cess Road Reclamation (includes culverts)	Connecting Road	Sat No. 2 to Rancher Rd
		Assumptions		
		Surface grade	0%	0%
		Length of Road (ft)	10,560	2,640
		Width of Road (ft)	30	10
		Area of road (acres)	7.3	0.6
	B.	Ripping and Hauling Asphalt Assumptions		
		Average Haul Distance (feet)	0	0
		Average Thickness of Asphalt (ft)	0.5	0.5
		Ripping Cost (per acre)	\$958.14	\$958.14
		Volume of Asphalt (cy)	5867	489
		Moving Materials	\$1.65	\$1.65
		Subtotal Ripping and Hauling Asphalt	\$16,668	\$1,389
	В.	Gravel Road Base Removal		
		Average haul distance (ft)	1000	0
		Gravel Road Base Width (ft)	14	0
		Gravel Road Base Area (acres)	3.39	0.00
		Average Road Base Depth (ft)	0	0
		Volume of Road Base (cy)	0	0
		Moving Materials	\$1.44	\$1.44
		Subtotal Gravel Road Base Removal Costs	\$0	\$0
	C.	Ripping Overburden with Dozer		
		Overburden Surface Area (acres)	7.3	0.6
		Ripping Cost (per Acre)	\$1,381.27	\$1,381.27
		Subtotal Ripping Overburden Costs	\$10,046	\$837
	D.	Topsoil Application		
		Average haul distance (ft)	1500	1500
		Topsoil Surface Area (ft2)	316800	26400
		Depth of Topsoil (ft)	0.5	0.5
		Volume of Topsoil (cy)	5867	489
		Moving Materials	\$1.44	\$1.44
		Subtotal Topsoil Application Costs	\$8,460	\$705
	E.	Discing/Seeding		
		Surface Area (acres)	7.3	0.6
		Discing/Seeding Unit Cost (\$/acre)	\$330	\$330
		Subtotal Discing/Seeding Costs	\$2,400	\$200
		altiplier for Projected Additions	0	0
	Su	btotal Reclamation Costs per Access Road	\$37,574	\$3,131

**Total Access Road Reclamation Costs** 

Trunk Lines	Trunk Line #1 (CPP to MU-4)	Trunk Line #2 (CPP to SR-1)	Trunk Line #3 (MU-15 to SR-1)
			Included in MU 15 WF REC
Length of Trench (ft)	7750	8500	0
A. Removal and Loading			
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.08	\$3.08	\$3.08
Subtotal Trunkline Removal and Loading Costs	\$23,907	\$26,221	\$0
B. Transport and Disposal Costs (NRC-Licensed Facility)			
1. 2" HDPE Trunkline			
Piping Length (ft)	7750	8500	0
Chipped Volume Reduction (ft3/ft)	0.0107	0.0107	0.0107
Chipped Volume (ft3)	83	91	0
2. 3" HDPE Trunkline			
Piping Length (ft)	0	I	2
Chipped Volume Reduction (ft3/ft)	0.0233	0.0233	0.0233
Chipped Volume (ft3)	0	0	0
3. 4" HDPE Trunkline			
Piping Length (ft)	0	0	0
Chipped Volume Reduction (ft3/ft)	0.0385	0.0385	0.0385
Chipped Volume (ft3)	0	0	0
4. 6" HDPE Trunkline			
Piping Length (ft)	7750	17000	0
Chipped Volume Reduction (ft3/ft)	0.0834	0.0834	0.0834
Chipped Volume (ft3)	646	1,418	0
5. 8" HDPE Trunkline			
Piping Length (ft)	0	0	0
Chipped Volume Recution (ft3/ft)	0.14	0.14	0.14
Chipped Volume	0.00	0.00	0.00
6. 12" HDPE Trunkline			
Piping Length (ft)	0	6000	0
Chipped Volume Reduction (ft3/ft)	0.3088	0.3088	0.3088
Chipped Volume (ft3)	0	1,853	0
7 16" HDPE Trunkline			
Piping Length (ft)	15500	11000	0
Chipped Volume Reduction (ft3/ft)	0.4864	0.4864	0.4864
Chipped Volume (ft3)	7,539	5,350	0
8. 18" HDPE Trunkline			
Piping Length (ft)	0	0	0
Chipped Volume Reduction (ft3/ft)	0.6155	0.6155	0.6155
Chipped Volume (ft3)	0	0	0
Total Volume Chipped (ft3)	8,268	8,712	0
Volume for Disposal Assuming Void Space (ft3)	9,095	9,583	. 0
Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	\$5.77	\$5.77
Subtotal Transport and Disposal Costs	\$52,476	\$55,292	\$0
C. Discing/Seeding			
Width of Pipeline Trench (ft)	4	4	4
Area of Pipeline Trench (acres)	0.7	0.8	0.0
Discing/Seeding Unit Cost (\$/acre)	\$330		
Subtotal Discing/Seeding Costs	\$235	\$258	\$0
Subtotal Reclamation Costs per Pipeline	\$76,618	\$81,771	\$0
Total Pipeline Reclamation Costs	\$872,563		

Tr	unk Lines	Trunk Line #4 (O-Sand Pilot)	Trunk Line (SR-2 to CPP)	WF 4 to CPP - projected
	Length of Trench (ft)	5500	2500	10000
A.	Removal and Loading			
	Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.08	\$3.08	\$3.08
	Subtotal Trunkline Removal and Loading Costs	\$16,966	\$7,712	\$30,848
B.	Transport and Disposal Costs (NRC-Licensed Facility)			
	1. 2" HDPE Trunkline			
	Piping Length (ft)	22000	0	0
	Chipped Volume Reduction (ft3/ft)	0.0107	0.0107	0.0107
	Chipped Volume (ft3)	236	0	0
	2. 3" HDPE Trunkline			
	Piping Length (ft)	3	4	5
	Chipped Volume Reduction (ft3/ft)	0.0233	0.0233	0.0233
	Chipped Volume (ft3)	0	0	0
	3. 4" HDPE Trunkline	0	15000	10000
	Piping Length (ft) Chipped Volume Reduction (ft3/ft)	0 0.0385	0.0385	0.0385
	Chipped Volume (ft3)	0.0363	577	385
	4. 6" HDPE Trunkline	U	3//	303
	Piping Length (ft)	0	0	0
	Chipped Volume Reduction (ft3/ft)	0.0834	0.0834	0.0834
	Chipped Volume (ft3)	0	0	0
	5. 8" HDPE Trunkline			
	Piping Length (ft)	0	0	0
	Chipped Volume Recution (ft3/ft)	0.14	0.14	0.14
	Chipped Volume	0.00	0.00	0.00
	6. 12" HDPE Trunkline			
	Piping Length (ft)	0	0	0
	Chipped Volume Reduction (ft3/ft)	0.3088	0.3088	0.3088
	Chipped Volume (ft3)	0	0	0
	7 16" HDPE Trunkline			_
	Piping Length (ft)	15500	15500	0
	Chipped Volume Reduction (ft3/ft)	0.4864	0.4864	0.4864
	Chipped Volume (ft3) 8. 18" HDPE Trunkline	7,539	7,539	0
	Piping Length (ft)	0	2320	0
	Chipped Volume Reduction (ft3/ft)	0.6155	0.6155	0.6155
	Chipped Volume (ft3)	0.0155	1,428	0.0133
	Chipped Volume (15)	V	1,120	v
	Total Volume Chipped (ft3)	7,775	9,544	385
	Volume for Disposal Assuming Void Space (ft3)	8,552	10,498	423
	Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	\$5.77	\$5.77
	Subtotal Transport and Disposal Costs	\$49,343	\$60,571	\$2,441
C.	Discing/Seeding			
	Width of Pipeline Trench (ft)	4	4	5
	Area of Pipeline Trench (acres)	0.5	0.2	1.1
	Discing/Seeding Unit Cost (\$/acre)	\$330	\$330	\$330
~	Subtotal Discing/Seeding Costs	\$167	\$76	\$379 \$33.668
	btotal Reclamation Costs per Pipeline	\$66,476	\$68,359	\$33,668
10	otal Pipeline Reclamation Costs			

Trunk Lines	Waste Transfer SR2 to MU-15	Waste Transfer SR2 to SRHUP 8
Length of Trench (ft)	12000	10000
A. Removal and Loading		
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.08	
Subtotal Trunkline Removal and Loading Costs	\$37,018	\$30,848
B. Transport and Disposal Costs (NRC-Licensed Facility)		
1. 2" HDPE Trunkline		•
Piping Length (ft)	0	
Chipped Volume Reduction (ft3/ft)	0.0107	
Chipped Volume (ft3)	0	0
2. 3" HDPE Trunkline	,	7
Piping Length (ft)	6	
Chipped Volume Reduction (ft3/ft)	0.0233	0.0233
Chipped Volume (ft3)	0	0
3. 4" HDPE Trunkline	12000	10000
Piping Length (ft)	12000	
Chipped Volume Reduction (ft3/ft) Chipped Volume (ft3)	0.0385 462	
4. 6" HDPE Trunkline	402	303
	0	0
Piping Length (ft) Chipped Volume Reduction (ft3/ft)	0.0834	
Chipped Volume (ft3)	0.0634	0.0654
5. 8" HDPE Trunkline	V	V
Piping Length (ft)	0	0
Chipped Volume Recution (ft3/ft)	0.14	
Chipped Volume Chipped Volume	0.00	
6. 12" HDPE Trunkline	0.00	0.00
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.3088	
Chipped Volume (ft3)	0.2000	
7 16" HDPE Trunkline	v	Ů
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.4864	
Chipped Volume (ft3)	0	
8. 18" HDPE Trunkline		
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.6155	0.6155
Chipped Volume (ft3)	0	. 0
Total Volume Chipped (ft3)	462	
Volume for Disposal Assuming Void Space (ft3)	508	
Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	
Subtotal Transport and Disposal Costs	\$2,931	\$2,441
C. Discing/Seeding		_
Width of Pipeline Trench (ft)	5	
Area of Pipeline Trench (acres)	1.4	
Discing/Seeding Unit Cost (\$/acre)	\$330	
Subtotal Discing/Seeding Costs	\$455	
Subtotal Reclamation Costs per Pipeline	\$40,404	\$33,668
Total Pipeline Reclamation Costs		

Trunk Lines	Waste Transfer SR1 to SRHUP 7	SR to HUP DDW Pipeline
Length of Trench (ft)	7000	9700
A. Removal and Loading		
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.08	\$3.08
Subtotal Trunkline Removal and Loading Costs	\$21,594	\$29,923
B. Transport and Disposal Costs (NRC-Licensed Facility)		
1. 2" HDPE Trunkline	_	
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.0107	0.0107
Chipped Volume (ft3)	0	0
2. 3" HDPE Trunkline		•
Piping Length (ft)	8	9
Chipped Volume Reduction (ft3/ft)	0.0233	0.0233
Chipped Volume (ft3)	0	0
3. 4" HDPE Trunkline	5000	•
Piping Length (ft)	7000	0 0285
Chipped Volume Reduction (ft3/ft)	0.0385	0.0385
Chipped Volume (ft3)	269	0
4. 6" HDPE Trunkline	0	9700
Piping Length (ft)	0.0934	0.0834
Chipped Volume Reduction (ft3/ft)	0.0834	809
Chipped Volume (ft3)	U	009
5. 8" HDPE Trunkline	0	0
Piping Length (ft)	0.14	0.14
Chipped Volume Recution (ft3/ft)	0.00	0.00
Chipped Volume 6. 12" HDPE Trunkline	0.00	0.00
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.3088	0.3088
Chipped Volume (ft3)	0.5000	0.5000
7 16" HDPE Trunkline	v	V
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.4864	0.4864
Chipped Volume (ft3)	0	0
8. 18" HDPE Trunkline	·	·
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.6155	0.6155
Chipped Volume (ft3)	0	0
Total Volume Chipped (ft3)	269	809
Volume for Disposal Assuming Void Space (ft3)	296	
Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	\$5.77
Subtotal Transport and Disposal Costs	\$1,708	\$5,135
C. Discing/Seeding		_
Width of Pipeline Trench (ft)	5	
Area of Pipeline Trench (acres)	0.8	
Discing/Seeding Unit Cost (\$/acre)	\$330	
	5765	\$367
Subtotal Discing/Seeding Costs Subtotal Reclamation Costs per Pipeline	\$265 \$23,567	\$35,425

Trunk Lines	SAT2 to SAT1 / Morton 1-20 WW Pipeline	SAT3 to SAT2 PSR
Length of Trench (ft)	24000	22000
A. Removal and Loading		
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.08	*
Subtotal Trunkline Removal and Loading Costs	\$74,035	\$67,866
B. Transport and Disposal Costs (NRC-Licensed Facility)		
1. 2" HDPE Trunkline		
Piping Length (ft)	0	
Chipped Volume Reduction (ft3/ft)	0.0107	
Chipped Volume (ft3) 2. 3" HDPE Trunkline	0	0
Piping Length (ft)	24000	
Chipped Volume Reduction (ft3/ft)	24000 0.0233	
Chipped Volume (ft3)	559	
3. 4" HDPE Trunkline	339	U
Piping Length (ft)	0	22000
Chipped Volume Reduction (ft3/ft)	0.04	
Chipped Volume (ft3)	0.00	
4. 6" HDPE Trunkline	0.00	010110
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.08	
Chipped Volume (ft3)	0.00	0.00
5. 8" HDPE Trunkline		
Piping Length (ft)	0	0
Chipped Volume Recution (ft3/ft)	0.14	0.14
Chipped Volume	0.00	0.00
6. 12" HDPE Trunkline		
Piping Length (ft)	0	-
Chipped Volume Reduction (ft3/ft)	0.3088	0.3088
Chipped Volume (ft3)	0	0
7 16" HDPE Trunkline		
Piping Length (ft)	0	-
Chipped Volume Reduction (ft3/ft)	0.4864	
Chipped Volume (ft3)	0	0
8. 18" HDPE Trunkline	0	
Piping Length (ft) Chipped Volume Reduction (ft3/ft)	0.6155	
Chipped Volume (ft3)	0.0133	
Complete Volume (113)	V	V
Total Volume Chipped (ft3)	559	846
Volume for Disposal Assuming Void Space (ft3)	615	
Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	
Subtotal Transport and Disposal Costs	\$3,548	\$5,372
C. Discing/Seeding		
Width of Pipeline Trench (ft)	10	10
Area of Pipeline Trench (acres)	5.5	
Discing/Seeding Unit Cost (\$/acre)	\$330	
Subtotal Discing/Seeding Costs	\$1,818	
Subtotal Reclamation Costs per Pipeline	\$79,401	\$74,905
Total Pipeline Reclamation Costs		

Trı	unk Lines	H-WF Rest. Bypass	Vollman WW Pipeline
	Length of Trench (ft)	2200	13000
A.	Removal and Loading		
	Main Pipeline Removal Unit Cost (\$\seta f of trench)	\$3.08	
_	Subtotal Trunkline Removal and Loading Costs	\$6,787	\$40,102
B.	Transport and Disposal Costs (NRC-Licensed Facility)		
	1. 2" HDPE Trunkline	0	٥
	Piping Length (ft)	0 0.0107	
	Chipped Volume Reduction (ft3/ft)	0.0107	
	Chipped Volume (ft3) 2. 3" HDPE Trunkline	U	U
	Piping Length (ft)	2200	0
	Chipped Volume Reduction (ft3/ft)	0.0233	-
	Chipped Volume (ft3)	51	0.0233
	3. 4" HDPE Trunkline	31	V
	Piping Length (ft)	0	13000
	Chipped Volume Reduction (ft3/ft)	0.04	
	Chipped Volume (ft3)	0.00	
	4. 6" HDPE Trunkline	0.00	155.57
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.08	
	Chipped Volume (ft3)	0.00	
	5. 8" HDPE Trunkline	0.00	0.00
	Piping Length (ft)	0	0
	Chipped Volume Recution (ft3/ft)	0.14	
	Chipped Volume	0.00	
	6. 12" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.3088	0.3088
	Chipped Volume (ft3)	0	0
	7 16" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.4864	0.4864
	Chipped Volume (ft3)	0	0
	8. 18" HDPE Trunkline		
	Piping Length (ft)	0	0
	Chipped Volume Reduction (ft3/ft)	0.6155	0.6155
	Chipped Volume (ft3)	0	0
	Total Volume Chipped (ft3)	51	500
	Volume for Disposal Assuming Void Space (ft3)	56	550
	Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	
	Subtotal Transport and Disposal Costs	\$323	\$3,173
C.	Discing/Seeding		
	Width of Pipeline Trench (ft)	8	
	Area of Pipeline Trench (acres)	0.4	
	Discing/Seeding Unit Cost (\$/acre)	\$330	\$330
	Subtotal Discing/Seeding Costs  ototal Reclamation Costs per Pipeline	\$133 \$7,243	

Tru	nk Lines	SRHUP 9 WW Pipeline	SAT3 to SAT2
	Length of Trench (ft)	4000	10950
A.	Removal and Loading	1000	10,00
	Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.08	\$3.08
	Subtotal Trunkline Removal and Loading Costs	\$12,339	\$33,779
	Transport and Disposal Costs (NRC-Licensed Facility)	<b>4.2,</b> 227	<b>,</b>
	1. 2" HDPE Trunkline		
	Piping Length (ft)	0	(
	Chipped Volume Reduction (ft3/ft)	0.0107	0.0107
	Chipped Volume (ft3)	0	(
	2. 3" HDPE Trunkline	·	
	Piping Length (ft)	4000	(
	Chipped Volume Reduction (ft3/ft)	0.0233	0.0233
	Chipped Volume (ft3)	93	0.025
	3. 4" HDPE Trunkline	75	`
	Piping Length (ft)	0	(
	Chipped Volume Reduction (ft3/ft)	0.04	0.04
	Chipped Volume (ft3)	0.00	0.00
	4. 6" HDPE Trunkline	0.00	0.00
	Piping Length (ft)	0	10950
	Chipped Volume Reduction (ft3/ft)	0.08	0.08
	Chipped Volume (ft3)	0.00	913.14
	5. 8" HDPE Trunkline	0.00	715.11
	Piping Length (ft)	0	(
	Chipped Volume Recution (ft3/ft)	0.14	0.14
	Chipped Volume	0.00	0.00
	6. 12" HDPE Trunkline	0.00	0.00
	Piping Length (ft)	0	(
	Chipped Volume Reduction (ft3/ft)	0.3088	0.3088
	Chipped Volume (ft3)	0.5000	0.5000
	7 16" HDPE Trunkline	v	`
	Piping Length (ft)	0	(
	Chipped Volume Reduction (ft3/ft)	0.4864	0.4864
	Chipped Volume (ft3)	0.4004	0.400-
	8. 18" HDPE Trunkline	V	,
	Piping Length (ft)	0	(
	Chipped Volume Reduction (ft3/ft)	0.6155	0.615
	Chipped Volume (ft3)	0.0133	0.013.
	Total Volume Chipped (ft3)	93	91:
	Volume for Disposal Assuming Void Space (ft3)	102	1,004
	Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	\$5.7
	Subtotal Transport and Disposal Costs	\$589	\$5,793
C.	Discing/Seeding		
	Width of Pipeline Trench (ft)	8	;
	Area of Pipeline Trench (acres)	0.7	2.
	Discing/Seeding Unit Cost (\$/acre)	\$330	\$33
	Subtotal Discing/Seeding Costs	\$242	\$664
Sub	total Reclamation Costs per Pipeline	\$13,170	\$40,230
	al Pipeline Reclamation Costs		

Trunk Lines	HUP to SR DDW Pipeline	Pipeline to Irrigator 1
Length of Trench (ft)	9700	24000
A. Removal and Loading		
Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.08	
Subtotal Trunkline Removal and Loading Costs	\$29,923	\$74,035
B. Transport and Disposal Costs (NRC-Licensed Facility)		
1. 2" HDPE Trunkline Pining Length (ft)	0	0
Piping Length (ft) Chipped Volume Reduction (ft3/ft)	0.0107	
Chipped Volume (ft3)	0.0107	
2. 3" HDPE Trunkline	V	· ·
Piping Length (ft)	0	0
Chipped Volume Reduction (ft3/ft)	0.0233	
Chipped Volume (ft3)	0.0255	
3. 4" HDPE Trunkline	·	
Piping Length (ft)	0	6000
Chipped Volume Reduction (ft3/ft)	0.04	
Chipped Volume (ft3)	0.00	230.75
4. 6" HDPE Trunkline		
Piping Length (ft)	9700	0
Chipped Volume Reduction (ft3/ft)	0.08	0.08
Chipped Volume (ft3)	808.90	0.00
5. 8" HDPE Trunkline		
Piping Length (ft)	0	24000
Chipped Volume Recution (ft3/ft)	0.14	
Chipped Volume	0.00	3391.25
6. 12" HDPE Trunkline		
Piping Length (ft)	C	· · · · · · · · · · · · · · · · · · ·
Chipped Volume Reduction (ft3/ft)	0.3088	
Chipped Volume (ft3)	C	0
7 16" HDPE Trunkline		
Piping Length (ft)	0 1011	
Chipped Volume Reduction (ft3/ft)	0.4864	
Chipped Volume (ft3)	C	0
8. 18" HDPE Trunkline		
Piping Length (ft)  Chinged Volume Badaction (ft2/ft)	0.6155	
Chipped Volume Reduction (ft3/ft) Chipped Volume (ft3)	0.0133	
Chipped volume (15)	· ·	, ,
Total Volume Chipped (ft3)	809	3,622
Volume for Disposal Assuming Void Space (ft3)	890	
Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77	
Subtotal Transport and Disposal Costs	\$5,135	\$22,987
C. Discing/Seeding	,	·
Width of Pipeline Trench (ft)	3	8
Area of Pipeline Trench (acres)	1.8	3 4.4
Discing/Seeding Unit Cost (\$/acre)	\$330	
Subtotal Discing/Seeding Costs	\$588	
Subtotal Reclamation Costs per Pipeline	\$35,646	\$98,477
Total Pipeline Reclamation Costs		

IV. Trunk Lines SAT2 to PSR2

	Length of Trench (ft)	5600		
A.	Removal and Loading			
	Main Pipeline Removal Unit Cost (\$/ft of trench)	\$3.08		
	Subtotal Trunkline Removal and Loading Costs	\$17,275		
В.	Transport and Disposal Costs (NRC-Licensed Facility)			
	1. 2" HDPE Trunkline			
	Piping Length (ft)	0		
	Chipped Volume Reduction (ft3/ft)	0.0107		
	Chipped Volume (ft3)	0		
	2. 3" HDPE Trunkline			
	Piping Length (ft)	0		
	Chipped Volume Reduction (ft3/ft)	0.0233		
	Chipped Volume (ft3)	0		
	3. 4" HDPE Trunkline			
	Piping Length (ft)	0		
	Chipped Volume Reduction (ft3/ft)	0.04		
	Chipped Volume (ft3)	0.00		
	4. 6" HDPE Trunkline			
	Piping Length (ft)	3500		
	Chipped Volume Reduction (ft3/ft)	0.08		
	Chipped Volume (ft3)	291.87		
	5. 8" HDPE Trunkline	2,1.07		
	Piping Length (ft)	0		
	Chipped Volume Recution (ft3/ft)	0.14		
	Chipped Volume	0.00		
	6. 12" HDPE Trunkline	0.00		
	Piping Length (ft)	0		
	Chipped Volume Reduction (ft3/ft)	0.3088		
	Chipped Volume (ft3)	0.3088		
	7 16" HDPE Trunkline	U		
		0		
	Piping Length (ft)	0 0.4864		
	Chipped Volume Reduction (ft3/ft)			
	Chipped Volume (ft3)	0		
	8. 18" HDPE Trunkline			
	Piping Length (ft)	0		
	Chipped Volume Reduction (ft3/ft)	0.6155		
	Chipped Volume (ft3)	0		
	T . 177 1 (CL) 1 (CA)	202		
	Total Volume Chipped (ft3)	292		
	Volume for Disposal Assuming Void Space (ft3)	321		
	Transportation and Disposal Unit Cost (NRC-Licensed Facility) (\$/ft3)	\$5.77		
_	Subtotal Transport and Disposal Costs	\$1,852		
C.	<i>5 5</i>	0		
	Width of Pipeline Trench (ft)	8		
	Area of Pipeline Trench (acres)	1.0		
	Discing/Seeding Unit Cost (\$/acre)	\$330		
~ .	Subtotal Discing/Seeding Costs	\$339		
	Subtotal Reclamation Costs per Pipeline \$19,4			
Total Pipeline Reclamation Costs				

V.	Set	tling Basin/Storage Ponds Reclamation	Storage Ponds	Settling Pond
••		Soil Sampling and Monitoring	2001.00	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	7	Number of Soil Samples	15	15
		\$/Sample	\$255	\$255
		Subtotal Soil Sampling and Monitoring Costs	\$3,825	\$3,825
	R	Liner/Subsoil Removal and Disposal	Ψ3,023	\$3,023
	ъ.	Thickness of clay liner (ft)	1	0.5
		Thickness of contaminated subsoil (ft)	1	0.5
		Width of Pond (ft)	200	252
		Length of Pond (ft)	100	432
		Depth of Pond (ft)	10 20000	20
		Surface area of pond (ft2)	20000	108864
		1. Removal and Loading		4000
		Volume of Clay Liner (cy)	1481	4032
		Clay Liner Removal and Loading Unit Cost (\$/cy)	\$4.02	\$4.02
		Subtotal Liner Removal and Loading Costs	\$5,953	\$16,201
		2. Transportation and Disposal		
		Volume of Clay Liner (ft3)	1481	4032
		Volume of Geotextile Liner (ft3)	52	0
		Volume of Geotextile Liner @ 40% void (ft3)	87	0
		Transportation and Disposal Unit Cost (\$/ft3)	\$5.80	\$5.80
		Subtotal Liner Transportation and Disposal Costs	\$9,103	\$23,405
		Subtotal Liner Removal and Disposal Costs	\$15,056	\$39,606
	C.	Grade and Contour		
		Volume of Embankment Material (CY)	7,407	80,640
		Average Grade (%)	0	0
		Distance (ft)	50	100
		Material Moving Unit Cost per WDEQ Guideline No.12, App.E (\$/cy)	\$0.174	\$0.294
		Subtotal Grade and Contour Costs	\$1,287	\$23,684
	D.	Topsoil Application		
		Area of surface disturbance (ft2)	20000	108899
		Average thickness of topsoil (ft)	I	1
		Average haul distance (ft)	1000	1000
		Surface grade (%)	0%	3%
		Volume of Topsoil (cy)	741	4,033
		Topsoil Unit Cost per WDEQ Guideline No.12, App.C (\$/cy)	\$1.442	\$1.442
		Subtotal Topsoil Application Costs	\$1,068	\$5,816
	E.	Discing/Seeding	·	
		Area of surface disturbance (acres)	0,5	2.5
		Discing/Seeding Unit Cost (\$/acre)	\$330	\$330
		Subtotal Discing/Seeding Costs	\$165	\$825
	Sul	btotal Reclamation Costs	\$21,401	\$73,756
		tal Settling Basin/Ponds Reclamation Costs	\$95,157	<b>,</b> ,
			,	
IV.	Ra	dium Settling Basin Reclamation	E. Radium Pond	W. Radium Pond
		*Cost estimates based on planned expenditures (June 2013)		
	A.	Soil Sampling and Monitoring	\$0	\$1
		*Soil Sampling and Characterization were Complete in 2011.		
	В.	Task Training and Access Control	\$3,657	\$3,657
	C.		\$15,687	\$15,687
		Site Backfill	\$14,334	\$14,334
	E.		\$6,318	\$6,318
	F.	Transportation & Disposal to 11e.(2) Facility		. ,
	- •	Volume of Subsoil for Disposal (cy)	242.5	242.5
		Transportation and Disposal Unit Cost (\$/cy)	\$156.73	\$156.73
		Subtotal Byproduct Material Transportation & Disposal Costs	\$38,007	\$38,007
	Su	btotal Radium Pond Reclamation	\$78,002	\$78,002
Total		ling Basin/Ponds Reclamation Costs	\$156,004	,
_ 5		0	<b></b> -	

		2015-2010 541019	25thate Opanie
v.	Purge Storage Reservoir Reclamation	PSR-1	PSR-2
	A. Soil Sampling and Monitoring		
	Number of Soil Samples	10 \$255	10 \$255
	S/Sample Subtotal Soil Sampling and Monitoring Costs	\$2,550	\$2,550
	B. Leachate Collection System Removal Costs	\$5,000	\$0
	C. Topsoil/Subsoil Application		
	Assumptions:  Average haul distance (ft)	1000	150
	Surface grade (%)	0	0
	Volume of Topsoil/Subsoil (cy)	83000	74000
	Topsoil/Subsoil Unit Cost per WDEQ Guideline No.12, App.C (S/cy) Topsoil/Subsoil Unit Cost per WDEQ Guideline No.12, App.E (S/cy)	\$1.442 \$0.00	\$0.000 \$0.38
	Subtotal Topsoil/Subsoil Application Costs per Reservoir	\$119,694	\$28,246
	D. Discing/Seeding	,	22
	Surface Area (acres) Discing/Seeding Unit Cost (S/acre)	6 \$330	32 \$330
	Subtotal Discing/Seeding Costs	\$1,980	\$10,560
	E. Well Abandonment		
	Number of Wells Average Depth (ft)	5 60	16 100
	Abandonment Cost	\$2.75	\$2.75
	Small Site Grading and Seeding (<1000 sq. feet)	\$55	\$55
	Remove and Dispose Casing (top few feet)  Monitoring Well Concrete Pedestal Disposal	\$33 \$110	\$33 \$110
	Subtotal Well Abandonment Cost	\$1,815	\$7,568
	Subtotal Reclamation Costs per Reservoir	\$131,039	\$48,924
	Total Purge Storage Reservoir Reclamation Costs	\$179,963	
VI.	Irrigation Area Reclamation	Irrigator No. 1A	Irrigator No. 2
	A. Irrigation Equipment Removal Costs	\$2,000	\$2,000
	B. Plowing		•
	Assumptions: Plowing Unit Cost (\$/acre)	\$100	\$100
	Irrigation Area (acres)	55	106
	Number of Cultivations	2	2
	Subtotal Plowing Costs C. Discing/Seeding	\$11,000	\$21,200
	Discing/Seeding Unit Cost (S/acre)	\$330	\$330
	Subtotal Discing/Seeding Costs	\$18,150	\$34,980
	Subtotal Reclamation Costs per Irrigation Area	\$31,150	\$58,180
	Total Irrigation Area Reclamation Costs	\$89,330	
VII.	Potential Subsoil Mitigation for Purge Storage Reservoirs	PSR-1	PSR-2
	A. Subsoil Removal and Loading		
	Surface Area (acres)	6	32
	Depth (inches) Volume for Removal (cy)	6 4,840	6 25,813
	Liner and Subsoil Removal Cost	\$4.02	\$4.02
	Subtotal Removal and Loading	\$19,448	\$103,723
	B. Subsoil Transportation and Disposal to 11e.(2) Facility Disposal Cost	\$156.73	\$156.73
	Subtotal Disposal Cost	\$758,573	\$4,045,724
	Subtotal Reclamation Costs per Reservoir	\$778,021	\$4,149,447
	Total Purge Storage Reservoir Mitigation Costs	\$4,927,468	
VIII.	Revegetation of Exxon Reclaimed Lands		
	Surface Area (acres)	217	
	Assumptions: 10% Reseeding potential areas of erosion (S/acre) 0.10 x 330	\$33	
	Total Exxon Reclaimed Lands Revegetation Costs	\$716	
IX.	Potential Ground Water Mitigation for Casing Leak Investigation and PSR-2  A. CLI/PSR-2 Investigation Costs (analytical and possible new well installation)	5150,000	*Based on planned expend
	B. Ground Water Pump and Treat Costs	3130,000	- Based on planned expend
	Area (ft2)	1,000,000	*Includes PSR-2, C-North
	Sand Thickness (ft)	20	
	Porosity (%) Affected ground water (kgal)	27% 40,392	
	Wellfield Pumping Cost	\$0.20	
	Reverse Osmosis Unit Cost (\$/kgal)	\$0.62	
	Bleed to Deep Disposal Well (%) Brine Volume for Disposal	25% 10,098	
	DDW Disposal Cost(S/kgal)	\$1.15	
	Permeate Volume for Re-Use	30,294	
	Satellite Pumping Cost (\$/kgal)	\$0.73	
	Subtotal Ground Water Pump and Treat Costs C. Well Abandonment (CLI Shallow Wells)	\$66,693	
	# of Monitoring Wells (Current)	158	
	Average Well Depth (ft)	156	
	# of Monitoring Wells (Planned) Average Well Depth (ft)	4 250	
	Total Well Depth (ft)	25,648	
	Well Abandonment (S/ft)	\$2.75	
	Small Site Grading and Seeding (S/site) Remove and Dispose Casing (S/well)	\$55.00 \$33.00	
	Concrete Pedestal Disposal (S/each)	\$110.00	
	Subtotal Well Abandonment Costs	\$102,608	
	Total CLI and PSR-2 Ground Water Mitigation Costs	\$319,301	
X.	Subsurface Release of Solutions Decommissioning Costs		
	Number of trunkline failures	17	
	Average cubic yards of contaminated soil estimated per event	8 \$160	
	Removal cost of soil Subtotal of subsurface decommission costs	\$21,734.65	
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XI.	Surface releases of Solutions Decomissioning Costs	25	
	Total surface acreage impacted Estimated % of soil contaminated	20%	
	Cubic yards of soil for removal assuming 3" depth	1995	
	Removal cost of soil per cy Subtotal of surface decomimissioning costs	\$160 \$318,810.00	
		20,29010.00	
TOT	AL MISCELLANEOUS RECLAMATION COSTS	\$7,679,285	